JANUARY, 1941

ELECTRICAL SOUTH

Ever Notice How The Big Jobs Go "BUCKEYE"? 200 Tons On This One!

Your contractors have a lot at stake, you know costs must be kept down to estimates if you're going to come out with a profit. There must be a reason, then, why so many contractors use Buckeye Conduit on the big jobs.

The reason lies in the way Buckeye Conduit is made. Youngstown has the most modern equipment money can buy but -- even more important -- Youngstown also has outstanding men. In the Youngstown mills are men who have spent more than 30 years doing one thing: making conduit. It is their life work; they would consider it a reflection on their ability to pass a single length that was not as perfect as human skill can make it.

Ask your distributor for Youngstown Conduit . Pipe and Tubular Products - Sheets - Plates - Tin Plate - Bars - Rods - Wire - Nails - Tie Plates and Spikes.

26-13C

BUCKEYE TRADE MARK YOUNGSTOWN CONDUIT

THE
YOUNGSTOWN
SHEET AND TUBE COMPANY
Manufacturers of Carbon and Alloy Steels
General Offices - YOUNGSTOWN, OHIO

Buckeye Conduit going into new Sewage Disposal Plant in Detroit.

PANTHER & DRAGON TAPES

1. First to be Wrapped and SEALED in Cellophane
2. Perfect Adhesiveness and Tensile Strength.
3. Strong Distinctive Green Core.
4. Colorful Attractive Boxes.
5. A Company in the Insulation Business Since 1878.

Sold Exclusively Through Distributing Jobbers

HAZARD INSULATED WIRE WORKS

DIVISION OF THE OKONITE CO.
WORKS: WILKES-BARRE, PENNSYLVANIA

New York Chicago Philadelphia Atlanta Pittsburgh Buffalo Boston Detroit Seattle
Dallas Washington Cleveland San Francisco St. Louis Los Angeles

Some call it the "SLAUGHTERHOUSE"

By any name, it is the place where lead sheath is deliberately destroyed so that weaknesses can be noted and corrected..so that your ANACONDA CABLE will have

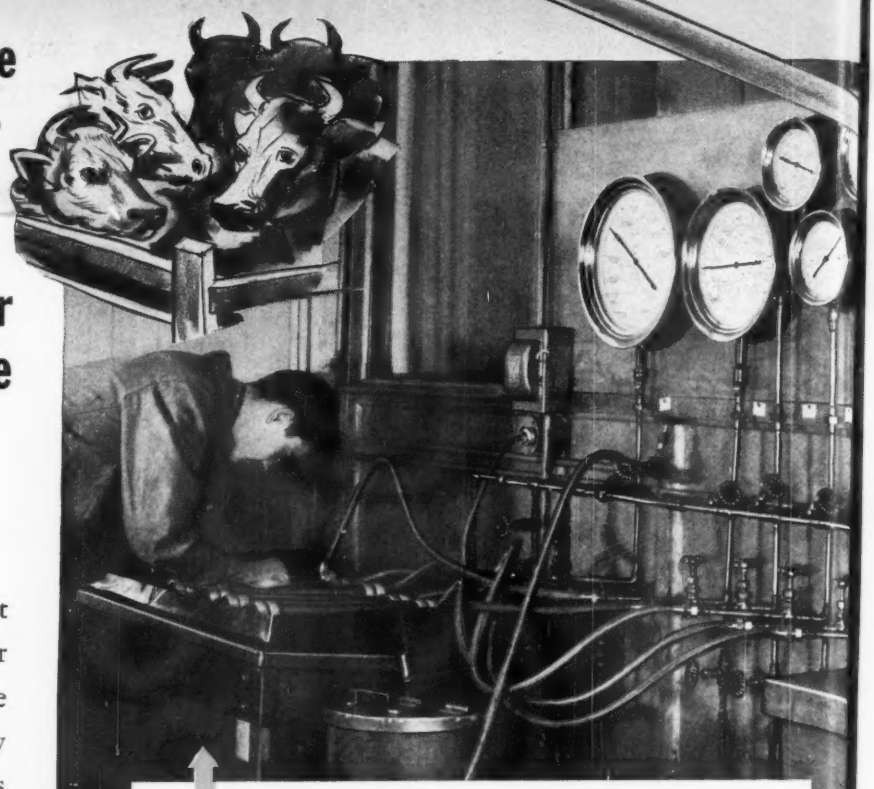
Longer Life

PERHAPS an even better name might be "The Life Extension Institute" for here Anaconda Wire and Cable achieve longer life and durability. Here, purposely subjected to irresistible pressures, metals fail. From studying these failures, Anaconda research men learn to make wire and cable that last longer.

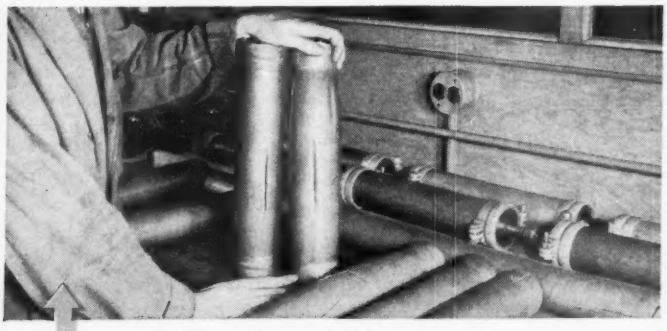
Research, painstaking and precise, is the basis of Anaconda's manufacturing control...a control that makes it possible for Anaconda to produce constantly better and more serviceable products to meet the needs and demands of American industry.

ANACONDA
from mine to consumer

40857



This technician is putting lead sheath lengths on their death bed. They will be subjected to pressures that will ultimately break down their structure to a point of failure.



Destroyed. These are samples of lead sheath after the test. What caused them to fail and how the deficiency, if any, can be corrected is the next step in building longer life into Anaconda cables.

USE MODERN IMPROVED **Anaconda Wire & Cable**

ANACONDA WIRE & CABLE COMPANY, General Offices: 25 Broadway, New York City; Chicago Office: 20 North Wacker Drive
A Subsidiary of Anaconda Copper Mining Company. Sales Offices in Principal Cities

JANUARY, 1941

Volume 21 No. 1

ELECTRICAL SOUTH

J. C. MARTIN, Manager
RICHARD P. SMITH, Promotion Manager
W. E. COOGLER, Production Manager

Editorial and Business Offices
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ATLANTA, GEORGIA

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MEMBER OF A. B. C.

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Contents

Departments

Entered as second class matter at Marietta, Ga., U. S. A., under Act of March 3, 1879.

AS the country's industry swells toward peak capacity, power, light and communication systems must be marshalled for peak service... General Cable serves these systems with the most complete line of electrical wires and cables available in America—and every item is of the uniformly high quality expected of General Cable products.

GENERAL CABLE GENERAL CABLE GENERAL CABLE

GENERAL CABLE

BARE and INSULATED WIRES and CABLES for EVERY ELECTRICAL PURPOSE

General Cable Corporation Sales Offices: ATLANTA • BOSTON • BUFFALO • CHICAGO • CINCINNATI • CLEVELAND • DALLAS • DETROIT • HOUSTON KANSAS CITY (MO.) • LOS ANGELES • NEW YORK • PHILADELPHIA • PITTSBURGH • ROME (N.Y.) • ST. LOUIS • SAN FRANCISCO • SEATTLE • WASHINGTON (D.C.)

Highlights of the Light and Power Industry in 1940

An eventful year in which the consumer received more service than ever before, at the lowest prices on record; employees worked shorter hours for highest hourly wages; taxing bodies made the largest levies in history; and the investor received lowest rate of return since depression.

THE increase in business activity, which has accompanied the national defense program, the placing of foreign war orders and the buying by private business for inventory purposes, has been reflected in a considerably enlarged demand for electricity. Sales of industrial power in 1940 were 16½ per cent above the previous year. Retail commercial sales were up 7 per cent, and sales for residential service were up 10 per cent. The total power output was up 11 per cent.

For the year as a whole for this industry, the consumer received more service than ever before, at the lowest prices on record; the employee worked shorter hours, at the highest hourly wages; the taxing bodies made the largest levies in history; and the investor received a rate of return on his investment lower than at any time since the bottom years of the depression.

Generating capacity proved ample to supply the highest peak loads of the year and the large new installations under way, as mentioned below, give assurance for the future of an adequate power supply, except perhaps in isolated locations. New army cantonments, camps and air bases and new munitions factories, wherever they have been located throughout the country, practically without exception, have been found to be reasonably within reach of existing power lines which have provided an adequate and dependable electric power supply as required.

Generating capacity added in stations contributing to the public supply in 1940 amounted to 1,790,000 kilowatts. The net gain in generating capacity, after deducting for equipment retired from service or reduced in capacity rating, was 1,380,000 kilowatts, bringing the total generating capacity at the end of the year to 40,330,000 kilowatts.

Six Million More Kilowatts

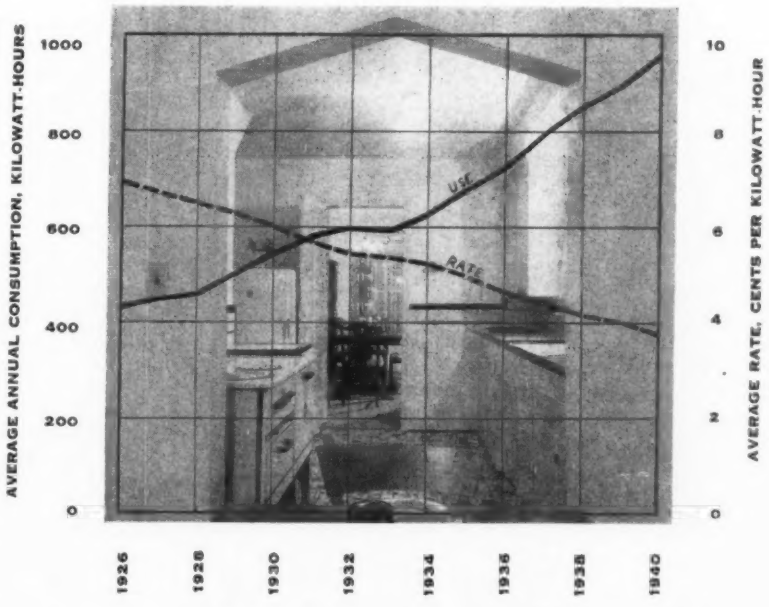
Generating capacity to be installed in 1941 by plants contributing to the public supply amounts to 3,412,000 kilowatts. In 1942 these plants will add 2,302,000 kilowatts, according to reports so far received. New installations are already being scheduled for 1943.

Because of the part they play in the defense program, it is noted that isolated industrial steam plants, which added 120,000 kilowatts of capacity in 1940, will add 251,000 kilowatts in 1941 and have already scheduled the installation of 110,000 kilowatts in 1942. Thus the grand total of new capacity which will be installed in the next two years is 6,076,000 kilowatts.

Peak Load

For the country as a whole, the sum of the peak loads on the va-

TRENDS IN DOMESTIC USE OF ELECTRIC SERVICE



The average annual domestic consumption in 1940 was 952 kilowatt-hours. The rate decreased to a new low average of 3.81 cents per kwh. The average annual domestic bill increased only 22 cents to a total of $36.27, although consumption increased 62 kwh.

rious systems was about 10 per cent above the similar figure for last year, and the total installed generating capacity of the country was about 30 per cent in excess of the sum of the individual peak loads. This nationwide peak load figure is significant only as an indication of the trend of load growth and of its approximate relation to total installed capacity. The excess represents unused capacity which is available to carry additional load and capacity held in reserve against breakdowns, etc. It also includes hydro capacity which can be depended upon only a part of the year, when there is sufficient stream flow. It does not, however, include overload capacity of generating equipment, which can be called upon and is an important and substantial resource in case of need.

Ample Supply Assured

So far as can be foreseen at this time, except perhaps for isolated situations, there will be an ample supply of power in 1941 and in 1942 to operate all the new munitions factories now projected. The increased power use which will come from employing more shifts in existing factories does not add appreciably to the peak load on power systems. If still further extensions of munitions factories should be undertaken, new generating capacity can be added to supply them as fast as they are built.

According to preliminary reports, construction budgets for the privately owned electric utilities for 1941 will exceed 1940 construction expenditures by $100,000,000; the 1940 budget amounting to approximately $580,000,000. This forecast does not include the 1941 construction expenditures which will be made by public agencies for power purposes.

Electric Sales to Ultimate Consumers, 1940*

Classification	1940	1939
	Kilowatthours	
Residential Service	23,250,000,000	21,084,000,000
Small Commercial	22,250,000,000	20,722,000,000
Large Power	59,550,000,000	51,108,000,000
All Other Sales	13,450,000,000	12,854,000,000
Total	118,500,000,000	105,768,000,000
	Revenues	
Residential Service	$ 886,000,000	$ 843,158,000
Small Commercial	685,000,000	660,683,000
Large Power	622,000,000	572,659,000
All Other Sales	220,000,000	213,083,000
Total	$ 2,413,000,000	$ 2,289,583,000

*Based on ten months' actual sales with November and December estimated. Includes both private and public light and power utilities. Compiled by Edison Electric Institute.

Taxes imposed on electric utilities for 1940 rose to a new high of $405,000,000, representing 17½% of every dollar of gross revenue. $7.25 of the average domestic service bill of $36.27 was paid out in direct taxes, leaving only $29.02 of net revenue.

Output in 1940

Output of electricity in 1940 by all agencies, private and public, contributing to the public supply, adounted to 140,750,000,000 kilowatthours, compared with 126,666,-317,000 kilowatthours in 1939. Fuels produced 94,500,000,000 kilowatthours, an increase of 13 per cent over the previous year, and water power produced 46,250,000,-000 kilowatthours, an increase of 7½ per cent over 1939. Water power production was stimulated by improved rainfall during the second half of the year.

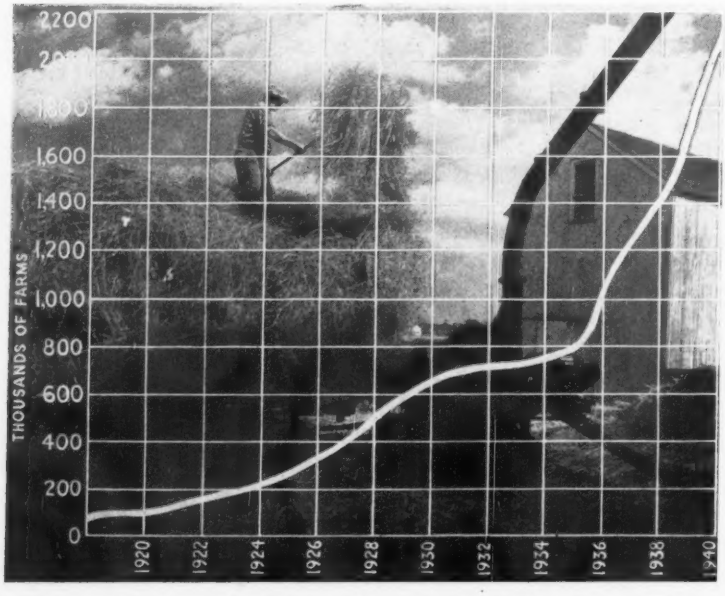
Basing figures on ten months' actual results, with November and December estimated, electric sales and revenues of light and power enterprises, both private and public, are approximated as shown in the accompanying tabulation.

One Million New Customers

The grand total of electric customers reaches 30,091,500 at the end of 1940, an increase of 986,200 over the number at the close of the previous year. In many of the states along the North Atlantic Seaboard practically the entire population now uses electric service.

There were 2,100,000 farm cus-

(*Continued on page 82*)



The year 1940 saw no slackening in the pace of rural electrification. The number of farms receiving electric service increased from 1,800,000 in 1939 to 2,100,000 in 1940

Amarillo Distribution Damaged By Severe Ice Storms

A BLACKOUT, comparable with those of Europe, was experienced in Amarillo, Texas, following one of the worst ice storms in the history of the Southwest on Saturday, November 23. By Sunday electric light and power and communication lines in a 50-mile area began to fall to the ground. The temperature was not low—between 31 and 33 degrees during the 48-hour period, accompanied by light rain which transformed into ice as it hit the wires and poles. Approximately three inches of rain fell in 48 hours. As usually happens in freak storms of this character, there was very little ice on the ground. The ground was warm from several days of comparatively mild weather. Trees suffered great damage throughout the city.

When officials of the Southwestern Public Service Company, which serves Amarillo, saw the impending danger to their lines, a representative of the company immediately left Amarillo and sent out a plea to other power companies for help. Already telegraph and telephone lines were down and it was necessary to drive away from the storm area to reach the outside world. Response to the plea was immediate.

Even before the storm was over, linemen and repair crews were coming into the city, many bringing materials, pole setting machines, and even two portable generating units for use in emergency power work to give the city water. Responding to the calls were units from the Kansas Gas and Electric Company, Wichita, Kansas; The Central Power and Light Company,

Fifteen Companies Help

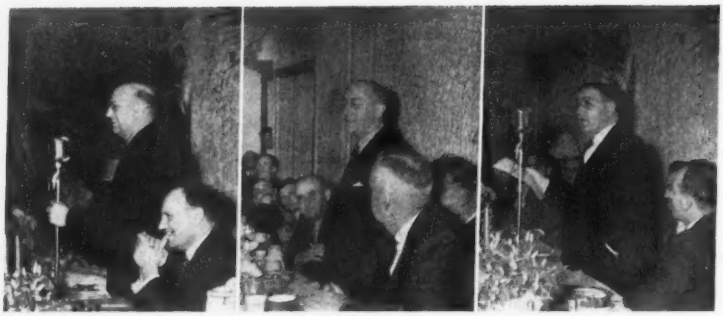
Corpus Christi, Texas; The Dallas Power and Light Company, and the Texas Power and Light Company, both of Dallas; The Texas E'ectric Service Company, of Ft. Worth, Texas; The West Texas Utilities Company, Abilene, Texas; The New Mexico Power Company, Santa Fe, New Mexico; The Albuquerque Gas and Electric Company, Albuquerque, New Mexico; The New Mexico Electric Service Company, Hobbs, New Mexico; The Southwestern Public Service Company, of the New Mexico district; The Oklahoma Gas and Electric Company, Oklahoma City; The Southwest Light and Power Company, of Lawton, Okla.; The Texas-New Mexico Utilities Company, of Plainview, Texas; The U. S. Potash Company, of Carlsbad, New Mexico; and the Zimmerman Electric Company, of Wichita, Kansas.

The storm left very few unsnapped wires in the city. Poles were splintered; cross beams pulled off from the weight of ice; often five or six poles in a row went down. Even before the worst of the storm, by mid-morning of Sunday, officials of the Southwestern company weighed a one-foot section of wire taken from a down-town line, and found that it weighed seven and one-half pounds. That weight of ice resulted in a pull of 2100 pounds on a one-span section, and many poles had 15 to 20 wires. The fact that a single pole or wire held was amazing.

First efforts were to restore lines to the nearest site of power production, and toward the disposal plant. The main retail business area of Amarillo is supplied with power from underground conduits, and was only without service for a part of a day.

The hospital need for power was great. Two large Amarillo hos-

Seven hundred and eight linemen, repairmen, utility company officials and amateur radio operators were guests at an "appreciation banquet" in Amarillo, Texas, sponsored by the Amarillo Chamber of Commerce as an expression of gratitude for the splendid work done in restoring electric service to Amarillo and vicinity after lines had been damaged by the most severe ice storm ever experienced in the north Texas area. Linemen and repair crews of fifteen utility companies were represented at the banquet. Mayor Rogers, of Amarillo, thanked the workmen.



Among those who spoke at the "appreciation banquet" were, left to right, Col. George Davis, vice president, Oklahoma Gas and Electric Co., Oklahoma City; Frank Ryburn, vice president, Texas Power and Light Co., Dallas; and Dr. Jason H. Robberson, president of Amarillo Chamber of Commerce.

pitals, several private hospitals, and the large Government-owned Veterans' hospital, were without power. Several babies were born by candle light. Crews began working at once toward the hospitals. Next to be considered were the large wholesale and retail food plants, meat packing, milk, produce, and grocery establishments.

Naturally the residence sections of the city were the last sections reached, but there was no complaint. Expressions of surprise at the speed of the repair companies were heard on all sides. Practically every light was burning in Amarillo Sunday night, December 1, a week after power lines and poles were twisted and thrown to the ground.

As an expression of gratitude for the aid given by the many companies who came to Amarillo's aid, and in recognition of the service rendered by every man, "Heroes of the Storm," as Amarillo called them, the Amarillo Chamber of Commerce and the Amarillo News-Globe Publishing Company were hosts at a banquet given to all workers, on Tuesday evening, December 3.

Officials of the city, heads of several of the power companies, and all workers, were honor guests, but receiving special honors, even before visiting officials or city officials, were the men who untangled the wires and restored service to the city.

In a statement made a few days after the storm, Carl Makeig, president of Southwestern Public Service Company, said:

"In spite of the havoc raised by the unprecedented ice storm that caused enormous damage to our electric system, the concerted efforts of the two hundred seventy-five linemen and helpers from this and other power companies throughout the Southwest that came to our rescue have already made it possible for us to restore electric service to nearly all of our local customers. Not even the most optimistic of us ever hoped that the present status would be achieved for at least another two or three weeks when we started to rebuild last Monday."

In commenting on the rehabilitation work done by neighbor company workmen, Mr. MaKeig said that the cooperation of the other power companies in sending as many men as each of them could spare together with trucks and other equipment was nothing short of phenomenal.

"It is the spirit behind this sort of 'help your neighbor' policy that makes these public service companies what they are today," Mr. MaKeig asserted. "If we had been forced to do this tremendous job with only our local staff of employees it would have been months before we could hope to have all service restored. Somebody named these linemen who have done such great work in rebuilding our electric distribution system 'soldiers of the storm' and it is a very apt phrase.

"And, speaking of soldiers," MaKeig continued, "this rapid organization of so many men from so many parts of the country definitely convinces me that the nation's electric power companies are ready, willing and able to take on any task assigned to them in the current na-

(*Continued on page* 84)

Among officials and executives present at the "appreciation banquet" were, left to right, Carl Makeig, president, Southwestern Public Service Co., Amarillo; J. W. Gilliam, Amarillo manager for Western Union; D. P. Sawyer, construction superintendent, Western Union; J. E. Cunningham, general manager, Southwestern Public Service Co., Amarillo; H. E. Samson, manager of New Mexico district, Southwestern Public Service Co.; Ross D. Rogers, Mayor of Amarillo; and Mr. Cunningham, again. Officials of more than a dozen utility companies were present.

The severe ice storm which struck Amarillo, Texas, late in November left hardly a span of telephone or power lines undamaged. Upper left, a typical joint construction pole showing the tangled mess of wires left by the storm. Upper right, trees throughout the city suffered untold damage. Center, lines in the Santa Fe railroad yards. Below, other typical scenes.

The 1941 Bride Market

Smart appliance dealers don't overlook this profitable market . . . they know that every bride is an actual customer—not just a prospect . . . each month has its quota.

BRIDES, at the rate of 1,300,000 a year, are taking their first steps in homemaking. One of their first problems is what electric appliances to buy and where to buy them. The appliance dealer is interested primarily in this second part of the problem.

Interest in brides has increased with the realization that they are by no means a June product. It is estimated that June brides in 1940 numbered 182,000. But there were 123,000 August brides, 115,700 September brides, and 111,800 October brides. These figures are based upon estimates made by *Bride's Magazine* for a period of years.

These hundreds of thousands of brides will be looking at the merchandise in the windows of appliance stores in the next few months. But she—the average bride—will be looking *at* the windows too, at your store front, at the way merchandise is displayed. The bride is discriminating. She looks for store atmosphere. She wants expert help, advice in planning her appliance purchases. She will pass you by if merchandise is carelessly "shoved" into your windows, if your sales floor is crowded. She wants intelligent help with her problems. But if merchandise looks hastily arranged, she will conclude that you haven't the time or patience to help her plan.

City:	No. Weddings, 1940:
Baltimore, Md.	10,070
Washington, D. C.	7,221
Louisville, Ky.	7,245
Houston, Tex.	7,468
Birmingham, Ala.	7,422
Memphis, Tenn.	9,268
San Antonio, Tex	2,545
Oklahoma City, Okla.	9,262
Little Rock, Ark.	6,601
Savannah, Ga.	4,437
Charlotte, N. C.	8,383
Fort Worth, Tex.	3,177
Nashville, Tenn.	8,385
Tulsa, Okla.	3,805
Norfolk, Va.	3,396
Jacksonville, Fla.	4,265
Chattanooga, Tenn.	4,070
Wichita, Kan.	4,630
Miami, Fla.	2,037
Knoxville, Tenn.	5,509
El Paso, Tex.	4,393
Tampa, Fla.	3,879

Electrical appliance dealers of the South have the opportunity to organize a large share of the "bride business." The accompanying table shows the number of weddings in 1940 in some of the leading cities of the South as compiled by *Linens and Domestics Magazine*. Past experience indicates that conditions such as will be experienced in 1941 will result in even a larger than average number of weddings.

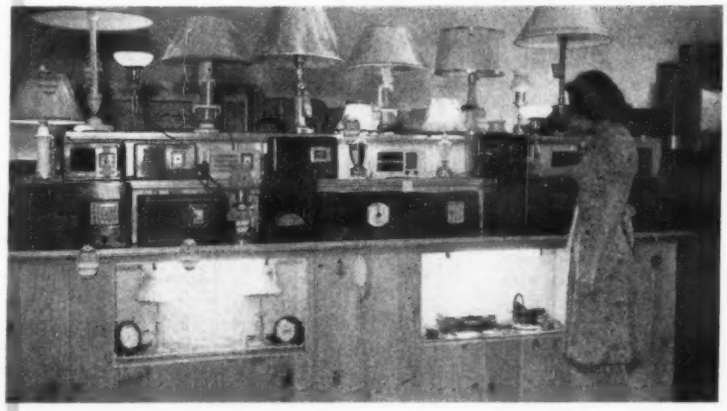
There are two phases of the

(*Continued on page* 14)

Here she is—the 1941 bride—making a stop before the windows of the Colony Radio Sales and Service, 6119 Georgia Ave. N.W., Washington, D. C. The spacious entrance, the modern window design, the brightly colored terrazzo floor, she said, attracted her. "Why?" we asked. "Because," she said, "it looks like a store that has room to display things properly. I don't like to see the appliances all crowded together. It looks cheap."

Unlike established homemakers she doesn't own any appliances so she is interested in all of them and has the problem of what to buy first. The attractive electric kitchen first claims her attention. Harold Stoll, proprietor, shows her the dishwasher. She had just one question to ask: "What would it cost to operate an electric kitchen like this?" "I was afraid," she said, "he would tell me too small a sum, but he didn't." "Why were you afraid?" we asked. "Because," she said, "I would have lost confidence in the store right there."

"Why do the towels from the laundry look so fluffy and white when you can't make them look that way when you wash them at home?" the bride wanted to know. Mr. Stoll was graded an "A" on his answer to this one. She liked this knotty pine paneled washer room. Mr. Stoll made it a feature of his new store because he doesn't demonstrate washers outside the store. He has the prospect bring her own washing to the store where they do a complete washing. He made an appointment to call for the bride and her washing next day.



"I fiddled with the radios and I liked them displayed with the lamps," said the bride, "but what I really was interested in were the waffle irons and the clocks." Mr. Stoll has these neon-lighted inset displays in the counter fronts throughout his store. Very effective with the knotty pine paneling. "I should charge you for taking a picture of this idea," he said.

A sale! And beautifully stage managed. Mr. Stoll always accompanies the store visitor to the door. And there is his last-ditch display, his ace in the hole—an ironing board. "I wanted it as soon as I saw it," said the bride. And the fact that there was a combination price on it with an iron didn't stop her. Net result of the bride's first "looking" trip, an ironing board and an iron, and a washer demonstration tomorrow.

Oil Heaters Promoted in Unique Utility Campaign

THE STORY of Florida Power and Light Company's present campaign, promoting the sale of oil burning heaters, is a "man bites dog" type of story. Instead of promoting the sale of electric heaters, the company is pushing the sale of oil burning space heaters—and for a reason.

Memories of the 1939-40 cold snap in southern Florida will not soon be forgotten. That season is outstanding for two things: first, it brought to the area the largest number of winter visitors ever to find their way to this part of the state, and second, it included the coldest spell on record. In an endeavor to keep these visitors and the local "home folk" comfortable every heating unit was sold out by appliance dealers, and all sorts of contrivances were rigged up in an attempt to produce sufficient heat to bring the temperature indoors up to something approximating the comfort point.

At first glance, it would appear that all this would be welcomed by the Florida Power & Light Company because of the additional current consumed. True, consumption did shoot up tremendously, but it was not a profitable increase because it was such a big demand for a short period. Overloaded transformers burned out, and other troubles arose because of the sudden increase in consumption. It cost many thousands of dollars to make repairs and to supply the demand.

Service Troubles Resulted

Then there was trouble in numbers of homes and places of business: the increased demand caused fuses to blow, fixtures to weaken, and other unsatisfactory situations to arise. Repercussions came when bills were rendered; why such heavy bills when so little satisfaction was derived from the use of electricity as a heating element? Dissatisfied consumers complaining of large bills always calls for investigation on the part of the Florida Power & Light Company.

The past winter included about 450 hours of cold weather when some sort of heating was necessary. Less than 500 hours of heating for an entire season may sound like a very small period of time to residents of other parts of the country, but the fact is that a person can be tremendously uncomfortable during that comparatively short time and suffer just as much as though the cold weather extended through several times that many hours. True, even as many as 450 hours of cold weather in a single season may never occur again in south Florida, or at least not for a long time, but there are occasions each winter when some heat is needed for a longer or shorter period. What to do about providing adequate heating for the average small or medium size home during such times was the problem the Florida Power and Light Company set out to solve.

A careful study of the situation convinced the company that electric space heating for large areas or during a prolonged period of cold weather, should not be recommended because the cost would seem high and the usual types of "spot" heater do not produce sufficient heat for such occasions.

After an exhaustive survey of all heating equipment, the company decided oil space heaters with electrical blowers would best do the job. Immediately members of the company sales department set about promoting the sale of such units and thereby further demonstrated that the Florida Power & Light Company had the welfare of the consumers at heart. Instead of recommending an increased number of electrical heating units, with greatly increased consumption of current, they have inaugurated a campaign for selling the oil space heating units.

The Promotion Plan

First, there must be some time devoted to selling the dealers themselves on the idea of adding a line of oil space heating units to their stock of electrical appliances. Several meetings were called. An exhibit was held in Miami participated in by some eight or ten manufacturers, and many modern oil heaters were displayed. More than 200 dealers and interested persons attended

(*Continued on page* 84)

These advertisements are typical of those that introduced the Florida Power & Light Company's unique campaign promoting the sale of oil burning electric heaters. The heaters are equipped with fans which mean a small additional load but principal objective is to eliminate expensive peak loads during very brief cold spells.

More New Features for Water Heater Campaign

Novel radio program; Donald Duck accompanied by his three noisy nephews; and a wide range of promotion material will be offered by Modern Kitchen Bureau in 1941.

DONALD DUCK returns to the electrical merchandising scene again this year, this time accompanied by his three noisy nephews, as The Modern Kitchen Bureau points its 1941 program for dealers towards the greatest year in history in the sale of electric water heaters.

The Bureau's new campaign, put together with the theme of "Electric Water Heater Jubilee," points out that 1940 saw more electric water heaters sold than any previous year and that with definite and established consumer acceptance of the electric water heating idea, 1941 offers dealers, utilities and manufacturers alike their greatest opportunity for profit.

H. L. Martin, manager of The Modern Kitchen Bureau, looks at it this way:

Million Heaters in Use

"With nearly a million homes now using electric water heating, consumer acceptance of the electric water heating idea is definitely here. Pioneering days are over and the time has come when sales will be easy to make. Because of the vast amount of new home building and the large modernization program now on among home owners, as well as the generally increased desire for this modern service, electric water heaters will see their biggest year in 1941."

Walter H. Sammis, vice president of Commonwealth and Southern, and chairman of The Modern Kitchen Bureau, has previewed the program and says:

"The Modern Kitchen Bureau's water heater promotion for the spring of 1941, in my opinion, offers utilities the best material that has ever been provided to increase the sale of electric water heaters and thus secure increased load from this important appliance."

A feature of the 1941 spring promotion is the brand new radio program which will give utilities and dealers a medium that has long been needed to advertise electric water heaters. Made up into a series of sixteen 1-minute water heating "ads" using song, verse and dialog, the whole thing goes on a transcription using professional talent and big-time radio announcers. No brand names are carried on the discs, as the whole idea has been worked out to sell the service of electric water heating and allow time at the end of each announcement for the dealer to tie in his own name and brand by local announcers. This particular feature of the new plans is expected to be one of the most useful and productive advertising pieces ever made available to dealers in electric water

Ginger Grey, whose pleasant voice sings out the praises of electric water heating in the Modern Kitchen Bureau's new radio program now being offered to utilities and dealers.

Prizes . . . cash money for utilities and dealers alike. This special explanatory broadside tells about window display contests, floor display contests, and contests for the best overall job in '41.

heaters.

Another prominent feature of the new campaign is a series of carefully worked out newspaper ads, mats of which will be made available to dealers. These ads are more flexible than last year and are written from a strictly local standpoint in order to work to the best advantage of dealers. Disney art is used, thus giving dealers the added attraction of some of the most popular characters of the day.

Thirteen major manufacturers created and are supporting this MKB program. Mailings of complete kits, including plan books and samples of each piece of material, are being distributed this month to a list of some 4,500 utilities and dealers. Advance notices of the campaign were sent out in December and according to present returns the new water heating program will be the most active campaign in history. Dealers, utilities, plumbers, and others interested in the sale of electric water heaters are asked to communicate with The Modern Kitchen Bureau.

Included in the campaign, other than the special radio program and the enlarged dealer newspaper advertising campaign, are window and truck banners, self mailing pieces, envelope enclosures, counter cut-outs of Donald Duck and family.

A "Jubilee Jackpot" of prizes to utilities and dealers has been provided for window displays, floor displays and the best over-all job in 1941 among utilities. A complete and separate broadside of this feature of the campaign is contained in each kit. Those wishing extra copies and others interested in the competition may obtain them from the Bureau. Two thousand dollars in cash prizes are offered by the Bureau.

Here's more water heating material . . . counter cut-outs, window and truck banners, display pieces, plan folders, bill stuffers, direct mail pieces. All going out to dealers from the Modern Kitchen Bureau to help realize the campaign theme of "Biggest Year Yet."

Selling Appliances To 1941 Brides

(*Continued from page* 10)

"bride market." First, there are a wide range of small appliances that make attractive as well as useful gifts: toasters, lamps, electric clocks, coffee makers, waffle irons, radios, electric irons, fans, vacuum cleaners, and floor lamps, to name only a few. The second phase of the market represents the equipment sold direct to the newly married couples. Modern young newlyweds want to live comfortably and electrical appliances almost always head their lists of purchases for their new home.

Many of the manufacturers provide promotional material that is particularly helpful in cultivating this market. Last summer Westinghouse sponsored a most successful campaign, called the "Advise-a-Bride Contest," which proved a great stimulation to electrical appliance sales. General Electric Company offered a folder of promotion, display, and advertising ideas on the bride market under the title of "Leap Year Loot." The theme of the latter material was "It's easy to sell gifts for the practical person with a sentimental side!"

There are possibilities for considerable profit in this field for the dealer who learns that "every bride is an actual customer—not just a prospect."

Twenty Years with One Line Marked by Celebration

By Nat M. Johnson

DIXIE Electric Company, of Lafayette, La., with branch stores in three other southwestern Louisiana cities, recently celebrated their twentieth anniversary handling Philco products. And it was some show, the people of Lafayette said. There were gifts, prizes, entertainment—and sales and more sales. Actually, 147 refrigerators were sold in four days.

It took a local printing plant nearly a week to run off the fifty thousand 14-page booklets, tabloid newspaper size and style, which were distributed in Lafayette and other nearby towns announcing the four-day event. These carried pictures and descriptions of the products, as well as news stories about the anniversary program, Dixie Electric Company, and its three owners, L. L., J. Edwin, and Jerome Butcher.

In addition, full-page newspaper advertisements were used which brought the people to the store by the thousands. Representatives of Philco were on hand to assist the Butchers and their organization in handling the crowds and in selling the refrigerators and other products.

In front of the store, above the sidewalk awning, was placed a huge "graph" titled "Butcher Bros., Dixie Electric Co., 20th Anniversary—Twenty Years of Progress with Lafayette." It showed how the company had added new products as they were brought out, starting in 1920, and was divided into four chapters—first chapter, 1922-1928, batteries; 2nd chapter, 1930-32, socket power and battery eliminators; 3rd chapter, 1933-1936, radio, house wiring, electrical appliances; 4th chapter, 1937-1940, refrigerators and air conditioners; 5th chapter, 1941-1943, a big "?".

Not only did they have a remarkable month in sales, but the next month following was one of the best the firm had ever had, proving that their big effort and expense in putting on the anniversary program was well worth while.

Much of this firm's success follows directly from its merchandising policies which stimulate the salesmen to extra effort. Compen-

Dixie Electric Company, of Lafayette, La., celebrated their twentieth year as Philco dealers with a tremendous sales campaign. Newspaper advertising and all manner of other publicity brought thousands of people to their Lafayette store. The big chart in front of their store, in the photograph above, indicated the progress made by the firm.

(Top) The Butcher brothers, owners of Dixie Electric Company, are most enthusiastic about the lines they handle. Left to right are Lawrence L., Jerome, and J. Edwin Butcher.

(Center) New refrigerators were unloaded by the carload during this special campaign. Enough prospects were obtained to keep salesmen busy for months.

(Bottom) An important phase of Dixie Electric Company's activity are the regular meetings of salesmen and, occasionally, of the entire organization. From them employees get the educational background and product enthusiasm which enables them to sell so successfully.

sation for appliance salesmen has been given much attention. J. Edwin Butcher, sales manager, says they have tried many methods of remuneration and found their present one the best—salary and commission. The monthly salary provides a fair living for the men, and the commission of 5 per cent on everything sold gives them the opportunity of earning a nice income.

There is a limit on trades which will be accepted and the rule is that a salesman does not receive his commission on a deal involving a trade-in until the latter is sold.

"On a clean-cut sale we make money and we want the salesman to make money, but on trades a lot of profit is tied up," explained Mr. Butcher.

How Salesmen Work

Four salesmen work in Lafayette, a city of some 17,000 population. They are not restricted as to territory, but can work anywhere in the city or out in the country. A man is protected on his carded prospects for 30 days.

The salesmen are required to make out a report daily. Each evening, or early the following morning, the day's report of all calls, etc., must be completed and handed to Mr. Butcher for his careful perusal.

Considerable emphasis is placed on sales and organization meetings. A sales meeting is held weekly and frequently meetings are held for the entire organization, employees from the other branch stores attending. These meetings are often addressed by factory representatives and become clinics in scope for the study of their products.

The regular sales meetings are conducted to a large extent by the salesmen themselves, though one or more of the three Butcher brothers are always in attendance. The company carries four major lines and usually one line is taken up at a meeting for study and discussion, or perhaps one of the salesmen demonstrates the line. In these meetings, they carry the subject into detail, check up on competition, and on sales lost and why they were lost.

The firm has tried many systems in connection with its sales work and wants the simplest system which will work. Most of the salesmen are really combination men and can handle the ordinary service complaint. This enables them to

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WHOSE JOB-- Adequate Wiring Promotion?

By A. E. Schanuel

Field Representative, National Adequate Wiring Bureau, New York City.

LIKE every other growing business, the electrical industry has taken on a burden of extra services—extra services that mean added costs that cannot be added to the price. It took one on when it first realized that the "bugs" were out of electric refrigeration and determined to step up its sales activities.

Giving the electric refrigerator buyer an allowance to pay for installing an outlet—broke down a lot of last ditch sales resistance. It was not a big burden to the industry and it put over a lot of refrigerator sales.

And it put over something else. It put the public on to the "wiring allowance" idea and wiring got onto the public's "free list." But the big burden it helped put on the industry is the "roll your own" wiring so many of our customers have in their homes today.

Right on top of the refrigeration drive came the "Better Light-Better Sight" home lighting program. It wasn't in the cards to put free wiring into that program. So there had to be a lot of improvising and the customer who could roll his own was a big help.

This improvised wiring has become a real burden. It cost one utility just over $100,000 in 1939 to service the replacement of fuse blow-outs caused by inadequate wiring in the homes of its 384,000 customers.

The customer may improvise the wiring he needs to operate the appliances he buys but the industry cannot put up with the cost of improvising electrical service in the customer's home.

So management has become sold on adequate wiring promotion. And the question, "Who's Job, Adequate Wiring Promotion?" is as pertinent as any that is up for the industry's attention today.

With the National Adequate Wiring Program now rounding out its third year, the industry has uncovered some interesting slants on this question. Up until the introduction and acceptance of the national program, the industry depended almost entirely on volunteers to do the adequate wiring promotion job—men and women in the industry, who volunteered to take it on as a plus job in addition to their regularly assigned duties.

Some of these volunteers got so wrapped up in the work that they sold their management on letting them take it on as a full-time job. One of these was a home lighting director with a staff of 30 home lighting advisors.

Now the management was well-satisfied with the lighting job these girls were doing. But the staff felt it was selling a better lighting service than it could deliver. Good lighting meant the right lamps plus the right arrangement and, as their operation expanded, the problem of satisfactory arrangement became increasingly difficult because of the wiring conditions encountered.

It was a problem they couldn't lick but they resolved there was something that could be done so new homes would not present the same problem. The director assigned herself and two of her staff to tackle the job.

Art Schanuel, in the past three years, has traveled thousands of miles in the interests of adequate wiring. He has observed at first hand the promotion plans and operating methods of hundreds of local adequate wiring bureaus and industry groups. The accompanying article was first presented as an address before the Indiana Electrical Association.

This was a pretty advanced thing to do at a time when new home construction started to fall off to a new low that leveled off for a three-year period. That the new job did not put them behind the eight-ball was indicated in a report of their operation for the 18-months' period from January 1, 1937 to July 1, 1938. Out of a total of 1,509 new homes built during that period, they got a chance to work on 831 prospects and sold 617 on installing wiring systems up to a standard that added 16,082 outlets over those originally planned.

Their report was presented at a meeting of their local industry in August, 1938. It got a big hand from the manufacturers' representatives, wholesalers and electrical contractors who were there to get a line on the National Adequate Wiring Program. The extra business this activity produced was gratifying to the industry but to the home lighting staff, which had been working on the job for seven years, it fell far short of what they knew its objectives should be.

The home lighting director told the meeting she had realized for some time that the wiring standards should be higher and recommended that the local industry adopt the new standards developed by the Industry Committee on Interior Wiring Design which were being promoted by the National Adequate Wiring Bureau. She regretted their work had been effective only on one-third of the new homes.

Entirely beyond the reach of their activity were the promotional builders, who built homes to sell — to sell at a price far too low to cover all the things the buyers wanted — the very least of which was adequate wiring.

She said, "We must find a way to do the adequate wiring job in these homes where two-thirds of our new customers will be living. We want your help."

That appeal put another volunteer to work on the adequate wiring promotion job. A manufacturer's representative, selling a wiring speciality product. He was up against the same problem in the same place. He saw in the adequate wiring program the possibility of a new approach to the promotional builder. If it worked, it might open the way to a more favorable introduction of his own product.

As chairman of the local adequate wiring committee, he took on the work and responsibility of organizing the local industry's program to promote adequate wiring in the promotional builder market. It developed into an important and effective program with fine industry cooperation. The utility support brought into the picture promotional and publicity experience and made it the outstanding adequate wiring promotion job during the first year of the national program's operation.

The local industry's printed report of this activity states: "The net result has been that the adequate wiring idea has gotten not only public acceptance, but acceptance of the building trades in this area, and the adequate wiring idea has received a mass of publicity that it would be almost economically impossible to secure in any other fashion."

It worked out just as this volunteer on the alequate wiring promotion job hoped it might. His company's speciality was installed and featured by the promotional builders cooperating with the electrical industry in this program. It introduced his product to the public and to the builders in a way that would have been impossible for him, working on his own.

Working with the industry, all over the country, in our field work on the national program, we have seen adequate wiring promotion develop from a volunteer job, to a full-time job, with industry cooperation and utility support. Naturally, it has become a sales department job. One of those tough ones. No demand — nothing to sell—nothing to show you have made the sale. That's the way it seemed to stack up.

Popular Demand Created

No demand. Well that picture is changing, slowly but surely. When the National Bureau took over in 1937, it checked up on what was being done, in a national way, to influence demand for adequate wiring. In the industry, we recognize the national women's magazines as a most potent force in influencing the demand for domestic electric service.

In Indiana, and this is representtative of other states, approximately 450,000 copies of national women's magazines go into the homes of your customers every month. For 15 years prior to 1937, they carried very little information on adequate wiring. A check-up of their files shows not more than 5 articles in all that time.

Now in 1940 — here's the picture. Woman's Home Companion, for October, read in 103,468 Indiana homes, has a fine feature article on adequate wiring — its illustrations spread across two pages. The title tells the story — "This House Will be Wired to Fit the Family."

Ladies' Home Journal, for September 1940, in one of a series of articles on "How America Lives" featured the "Essentials of Good Wiring" — two pages illustrated. It went to 73,011 Indiana homes. In July, Collier's Weekly carried "Living in Ease," an article on the Collier's House of Ideas pointing out the need of correctly planned electrical wiring and giving the complete adequate wiring story to 88,477 customers of the electrical industry in Indiana.

Woman's Home Companion, in April and September, had references to wiring plans approved by the National Adequate Wiring Bureau. Ladies' Home Journal, in September, carried an item, "Check Your Electrical Connection," in a feature article on portable cooking.

In McCall's, for August, which was delivered to 84,117 Indiana homes, appeared an item on adequate wiring in an article on air conditioning. American Home, in June, to 50,701 Indiana homes, carried an item on "Check Your Wiring," the National Adequate Wiring Bureau's consumer pamphlet. Good Housekeeping, in April, to 62,327 Indiana homes, had an article on the kitchen and laundry with illustrative items on appliance circuits for the ironer and roaster.

Household Magazine, in June and September, to 73,966 Indiana homes, included items on the convenience outlet for the roaster and weatherproof outlets for the porch. House Beautiful, in April, had a featured article, "Wiring and Lighting for Today's Home," and again in May, an item in answer to a reader's inquiry on "Why Plugs Heat Up."

That gives us an idea of what's been going on to influence demand for adequate wiring in Indiana this year and for the past three years. And it is influencing the architect, too, in planning adequate wiring installations for new homes.

Builders Publications

Architectural Forum, the foremost national magazine serving architects and the building industry, in its issue of August, 1940, details the residential requirements for adequate wiring in a four-page presentation. Quoting from the introduction, Architectural Forum states: "The National Adequate Wiring Bureau, now in its third year, has mobilized the electrical industry behind an effort to make the public aware of wiring and to furnish architects and builders with reliable data and good wiring practices."

It is influencing the promotional builder, who builds to sell — to sell at a price. Operative Builder and Contractor, a publication in

this field, in its April 1940 issue, carried a four-page illustrated article featuring "Certified Adequate Wiring — A High Powered Sales Feature."

So the demand is building up for the sales department that takes on the adequate wiring promotion job. And in Certified Adequate Wiring the sales department has something to sell and something to show when the sale is made.

Operating in a city with less than 1 per cent saturation of electric ranges, with 2,298 new or remodeled homes built in 1939, adequate wiring promotion sold 954 certified wiring installations. Five hundred and three of those new homeowners bought electric ranges, 118 bought water heaters, 649 kitchen ventilating fans and 40 per cent installed automatic heating with either a furnace fan or water pump.

A check of the kilowatt-hour consumption in the old home, showed that those who used electric ranges in their old homes increased their average monthly consumption from 151 kilowatt-hours to 245 kilowatt-hours in the adequately wired home. Those who did not have electric ranges in either the old or new home increased their average monthly consumption from 39 kilowatt-hours to 119 kilowatt-hours in the adequately wired home.

The sales department of a West Coast utility has been on the adequate wiring promotion job long enough to have established objectives for a long range program. Over the period they have set for the program, they will have adequate wiring installations in half the new homes constructed in their territory. A survey of their customers now living in homes with certified wiring installations shows a range saturation 83 per cent over the average in their territory. Water heater saturation is 36 per cent higher; air heaters, 40 per cent higher; and refrigerators, 20 per cent higher.

New Home Market

The new home, as a market for the electrical industry, has come back with a bang. Since the three-year low of 1932-33-34, which averaged 45,700 units per year, it climbed in the next three-year period to an average of 170,000 units per year. For the current three-year period, 1938-39-40, an average of over 400,000 units per year is indicated, based on an estimate of 500,000 units for 1940.

The immediate and potential possibilities of this new home market for the electrical industry have given it a more prominent place in the sales picture than it has ever had before. Adequate wiring promotion is developing into an effective sales approach for the industry's sales activity in this market.

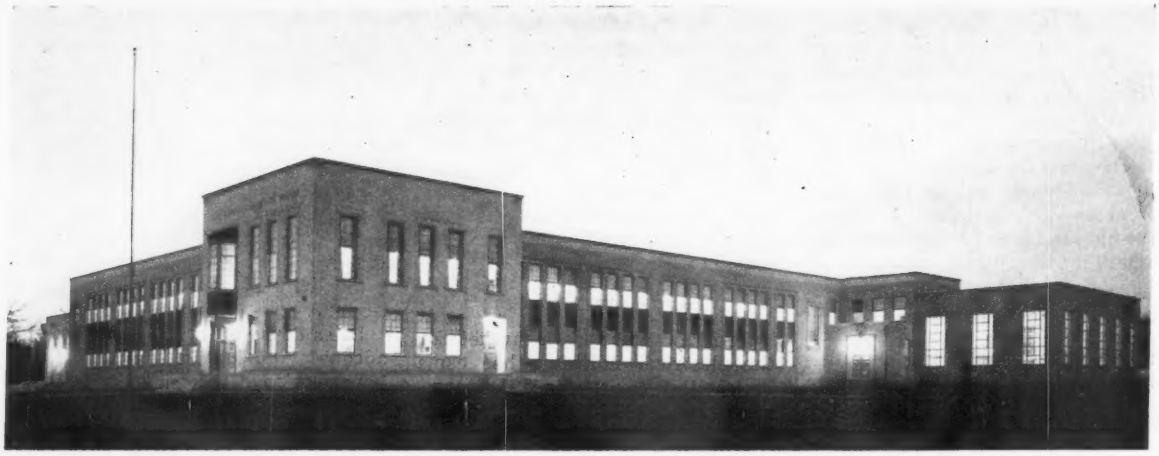
Down in the southwest, for the past several years, utilities have intensively promoted attic ventilation. The acceptance has been encouraging. In the spring of 1939, one of these utilities took on certified adequate wiring promotion. It was used as the sales approach in their attic ventilation activity on the new home market. Their report on the first 55 homes certified for adequate wiring showed 30 homes with special circuits for attic fans.

Sales departments, taking on the adequate wiring promotion job, have developed some interesting by-products of this program. With the industry calling on the sales department to carry the ball on such activities as employee training, dealer cooperation, industry relations and public relations, adequate wiring promotion is playing a helpful part.

Last winter, the new business department of a utility with 80,000 domestic customers, located in the north central district, worked out an adequate wiring presentation and demonstration for the benefit of their customer-contact personnel. One of their district managers picked it up to use at an electrical contractor meeting. An elert elec-

(*Continued on page* 82)

These pages from the women's magazines and the building trade journals are representative of the many articles discussing adequate wiring that have appeared in these magazines during the past year. Millions read them.



Proper Lighting Exemplified In New Dallas School

THERE are relatively few well lighted school buildings throughout the country even though a considerable amount of publicity and sales effort have been directed into these channels. Accordingly, such outstanding lighting installations as that completed recently for the Alex W. Spence Junior High School, of Dallas, Texas, should be brought to the attention of every local school board by electrical contractors, utility company lighting sales departments, and others interested in promoting better light-better sight.

The great value in promotion work of this kind lies in the fact that the installation is an actuality and not merely a proposal or a suggestion as to what could be done. Realizing what is actually being done in other communities, local school boards will become much more receptive to any proposals from the local electrical industry for relighting existing school buildings, or correctly lighting new school structures.

The electrical installation for the Alex W. Spence School was made by the Republic Engineering Company, of Dallas, headed by W. C. Walls, owner and general manager. The lighting installation is such that students can study, read, or work in the shops, with no eye-strain. A minimum of fifty foot-candles was provided throughout the greater part of the school.

Front view of the building shows four very handsome, ornamental fixtures—two over the main entrance, and the other two over the entrance to the auditorium. All outside fixtures, as well as all fixtures throughout the building, except in the classrooms, are ornamental; beauty was considered as well as efficiency in lighting.

All classrooms have radio receivers, electric clocks, program system, fire alarms, etc.

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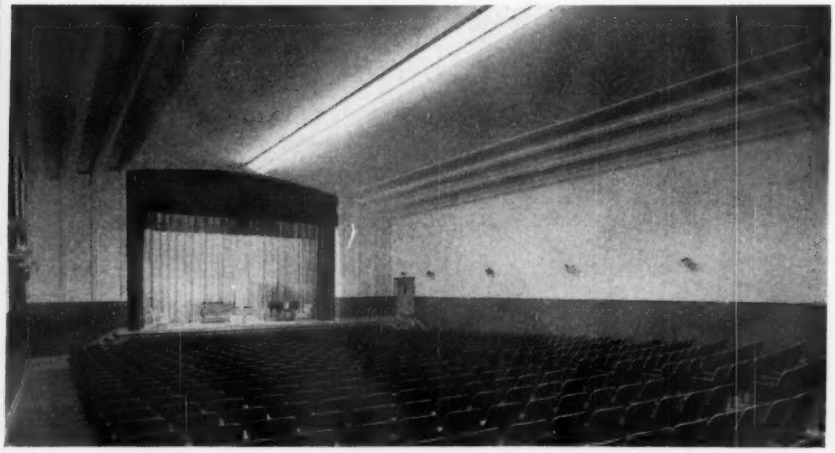
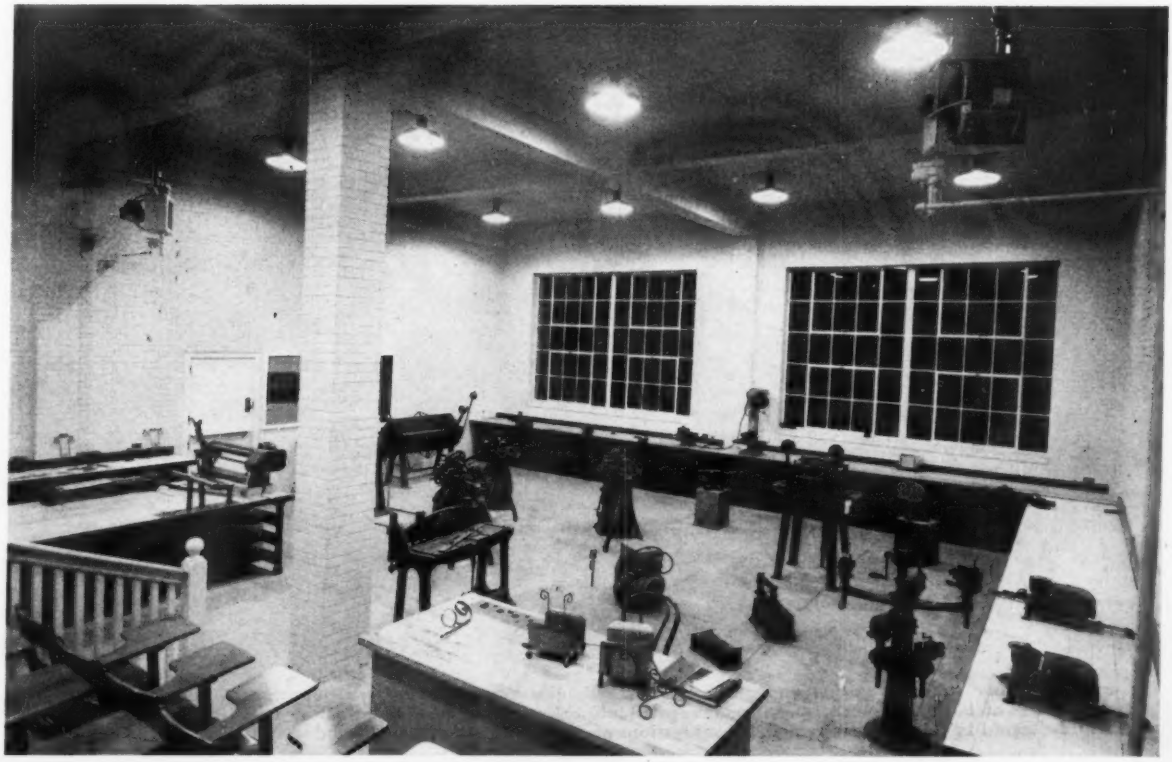


This large auditorium is correctly lighted for eye-ease and attractiveness. Principal illumination is from the overhead light trough. The construction details of the trough are shown above.

Above, a view of the library of the new Alex W. Spence Junior High School, in Dallas. Thoroughly diffused indirect high intensity lighting is provided by six fixtures, each containing three 150-watt lamps. The average level of illumination is approximately 50 foot-candles. Another example of adequate lighting is to be found in the school's metal and wood working shops, part of which are shown below. Twelve RLM reflectors with 300-watt lamps give very satisfactory illumination. Intensity exceeds fifty foot-candles at all machines.



Fluorescent and Incandescent Units Used Effectively

By W. J. Burton

Lighting Engineer
Duke Power Company
Greensboro, N. C.

SINCE the advent of the fluorescent lamp, there have been many varied opinions as to the relative merits of fluorescent and of incandescent lighting. However, it is now generally conceded that there are certain fields in which each can best be applied. These fields have been very effectively coordinatd in the recently remodeled home of the Powell Walk-Over Shoe Store, of Greensboro, N. C.

In order to maintain his standing as one of the leading merchants of this section, Mr. Powell decided to completely renovate the present store in such a manner as to set the pace for stores of this type. Charles C. Hartmann, Greensboro architect, was given complete charge of the project and realizing that lighting is one of the most important factors in modern merchandising, he decided after careful consideration of the respective features of fluorescent and incandescent lighting that the treatment most satisfactory for the architectural design of the store would be a combination of the two systems, using incandescent fixtures of high efficiency with an indirect cove of fluorescent lamps.

For general lighting, Holophane "No-Box" flush mounted units were selected. The strong downward punch which these fixtures give to the light directs most of the light directly upon the merchandise. This factor is of particular importance in a shoe store where most of the merchandise is viewed on the floor rather than at counter level as is customary in other types of business.

An objection frequently raised to such flush mounted fixtures, however, is that they do not throw much light on the ceiling or walls of the store so that although the merchandise is well lighted, the store presents a dark and uninviting appearance, especially to customers on the outside. It was to overcome this characteristic and to give the interior a light and airy tone that the fluorescent lamps were employed. As the lineal feature of the fluorescent lamp lends itself well to cove lighting, the wall cases were designed to incorporate a cove in which continuous strips of Wiremold Fluorescent channel with asymetrical reflectors were placed.

The Holophane fixtures, using 300-watt lamps, produce an average illumination of 32 foot-candles and

An unusually good example of the proper coordination of the advantages of both fluorescent and incandescent lighting is to be found in this recently remodeled sales room of the Powell Walk-Over Shoe Store, in Greensboro, N. C. General level of illumination is fifty foot-candles of which 32 are provided by incandescent units.

the fluorescent cove adds an additional 18, making a total of 50 foot-candles evenly distributed over the entire sales floor.

A very unusual application of light in this store and one which has attracted particular comment is the use of a luminous panel covering the entire vestibule ceiling. The purpose of this is to provide an exceptionally high level of illumination in the vestibule to attract customers to the windows on each side of the lobby and to give a well lighted entrance to the store. This is accomplished by continuous rows of 40-watt fluorescent lamps on 4-foot centers mounted behind panels of "Louvre-glass," a transparent plastic substance in which are imbedded rows of opaque white louveres spaced about ⅛ inch apart so as to completely shield the lamps from normal view, yet allowing the maximum amount of light to pass through. At night, this ceiling appears softly lighted but 40 foot-candles are provided in the vestibule.

The show windows are of the low ceiling "eye-level" design most effective for displaying small objects such as are featured in shoe stores and are lighted by double rows of fluorescent lamps mounted on Wiremold channel with the Alzak reflectors flush with the window ceiling. Wiring and lighting equipment was installed by the Starr Electric Company, of Greensboro.

The overall result makes this store another outstanding example of the manner in which carefully designed lighting fits in with the architectural problem and presents a store of which the entire community is proud.

Combination Lighting Used Effectively in Oklahoma

By O. D. Hall

A SUBSTANTIAL increase in business of the Zale Jewelry Company, Oklahoma City, is attributed to modern lighting recently installed by the Oklahoma Electrical Supply Company, headed by Z. Hirsch.

Operators of the Oklahoma City store, which is one of a chain of retail jewelry establishments under the same ownership in the Southwest, are highly pleased with results obtained by the new lighting arrangement.

"The whole store has shown a marked increase in business in the new location and we attribute a substantial part of this to our new lighting," said Mr. Lipshy, manager. "We have received many compliments from customers who say that the soft lighting does not hurt their eyes and has a generally pleasing effect upon them. There are no dark spots in our new store and unpleasant glare and indistinctness of merchandise are eliminated. The slight increase in our electric bill is more than justified by the results."

The Zale installation represents a scientific combination of fluorescent and incandescent lighting. "Fluorescent lighting alone is not the most effective for displaying diamonds," Mr. Hirsch points out. "It is through a proper mixture of fluorescent and incandescent illumination that the true sparkle and beauty of diamonds are revealed."

Two continuous rows of 48-inch fluorescent lamps, twenty-four in all, mounted on a decorative wood moulding down the center of the store ceiling, supply forty foot-candles of general lighting. Thirty-three 100-watt incandescent down-lights, set in louvered recessed reflectors, furnish 65 foot-candles of special lighting over the counter show cases on either side of the main floor. These lamps are set into aprons built around the store about six feet above the show case tops. The combination of fluorescent and incandescent illumination brings out the qualities of diamonds and other jewels in these show cases with maximum effectiveness.

Fluorescent lamps also are placed in the glass wall cases averaging four to the case. These are 36-inch, 30-watt lamps and produce a daylight effect in the cases.

The outside front of the store is of blue carrara glass with flashed glass elements lighted with fluorescent luminous tubing.

Three 24-inch fluorescent lamps are placed perpendicularly in each of the two show windows. These serve chiefly for decorative purposes, while the general show window lighting is supplied by 150-watt incandescent lamps in recessed reflectors.

Print Shop Lighting

A transformation from an outmoded drop-light system, installed many years ago, to modern flu-

This interior view of the Zale Jewelry Company, of Oklahoma City, shows how fluorescent lighting was combined with incandescent lighting for advantageous effects. The fluorescent lamps are used in continuous rows down the center of the ceiling as well as in display cases. Thirty-three 100-watt incandescent down lights, set in louvered recessed reflectors, provide high intensity illumination directly over the counters. Diamonds are much more attractive under these bright incandescent units.

This view of one section of the composing room of the Leader Press, Inc., Oklahoma City printing plant, shows the use of fluorescent lamps in troughs directly above the composition tables at the right in the photograph and in the back of the room. General illumination is provided by conventional incandescent units at the ceiling.

orescent illumination, has been accomplished in the printing plant of the Leader Press, Inc., Oklahoma City.

C. D. Snyder, vice president, Wetherbee Electric Co., Oklahoma City, reports that his firm sold the printing company on the advisability of making the improvement by showing that lighting conditions in the plant could be vastly improved and monthly electric bills of the firm reduced.

The greatest transformation was made in the composing room where combinations of three-foot and four-foot fluorescent lamps of 30-watt and 40-watt ratings were installed in continuous troughs having Alzak reflectors. These are suspended approximately 30 inches above the working plane. The troughs vary in length according to the lengths of working tables beneath them. Some are as much as 27 feet long.

"This application of fluorescent lighting to a large printing plant gives it from three to four times as much foot-candle intensity as the plant had before at a 30 per cent decrease in the amount of power used," said Mr. Snyder. "Combination of the lighting and power load on one meter, through a complete rearrangement of the wiring, however, was a large factor in this saving."

The fluorescent equipment is all power-factor corrected and is installed not only in the composing room but also throughout the press rooms and general offices of the firm, which is one of the oldest and largest printing and publishing establishments in Oklahoma City.

Great future possibilities exist for the use of fluorescent lighting in aisles between rows of bins or filing cases which rise from the floor to the ceiling, Mr. Snyder believes. He sold this idea to the Oklahoma City factory parts branch of the Chevrolet Company, with most satisfactory results, he says.

The firm changed the design of its stock room, which formerly had a 14-foot ceiling and required the use of ladders to reach the higher rows of bins or compartments in which automobile parts were kept, by building in a mezzanine floor of steel grating beneath which the stock bins were installed.

The Wetherbee Electric Co., installed 85 three-foot fluorescent lighting units, at the ceiling line of the mezzanine floor, which is low enough to avoid the necessity of climbing. Three such units were installed between each row of bins to provide sufficient lighting intensity in each aisle. These do not use any more energy than the old incandescent lights, which were formerly used by the firm in the stock room and which had to be turned on and off frequently. The fluorescent lamps can be left burning, saving time, and giving far better lighting than was formerly available.

Neon Tubing Supplies Corridor Lighting

BUILDING managers, architects, real estate men and electrical contractors throughout the Southwest have expressed a keen interest in the recent installation of neon tubing in the hallways of the Majestic building of San Antonio, Texas, managed by Weeden B. Nichols.

Early in 1939, the management of this building began plans for a modernization program. Although this building was completed in 1928 and, consequently, was one of the newest buildings in the city, certain changes were desirable, the chief among them being installation of air conditioning.

Following a survey, it was found that the only way in which such a system could be installed was to run the conduits through the hallways, suspended from the ceilings. To do this, however, and construct a second or false, ceiling to cover up the conduits, would bring the ceiling down to a point where conventional lighting fixtures would hang too low. Installation of neon tubing solved the problem.

The tubing runs lengthwise of the hallways, and at no point is it more than two inches from the ceiling. It provides an even distribution of light throughout the

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Neon tubes now supply lighting for the corridors of the Majestic building since an air conditioning installation made it necessary to install false ceilings in all hallways. Conventional lighting fixtures would have projected too far downward.

Calculating Feeder Loads Under the 1940 Code

By B. Z. Segall

THE VARIOUS rules for feeder calculations have been completely revised. As stated in the preceding discussion of the changes in Article 210-Branch Circuits, the basic values for the feeder sizes and protection are contingent on these primary branch circuit determinations.

Two general rules are set up for minimum feeder sizes. First a feeder cannot be smaller than No. 10 if: (a) it is a two wire feeder supplying two or more, two wire branch circuits, or (b) it is a three-wire feeder supplying three or more two wire branch circuits, or two or more three-wire branch circuits. This, of course, imposes definite limitations to the radial type of wiring system wherein feeders are distributed from the point of main service entrance to several locations within a building and at these various points serve branch circuit distribution cabinets (See Figure 1).

The second rule requires the feeder to be the same size as the service entrance conductor if: (a) the feeder carries the total service entrance conductor current, *and* (b) the service is No. 8 or smaller.

New Section 2202 retains the voltage drop recommendation of 3% for power loads as found in the second sentence of Section 2201 of the 1937 Code. In addition a 1% recommendation has been added for lighting loads or combination lighting and power loads. This drop is still to be considered as the feeder voltage loss from the point of connection of the feeder at the source of supply to the final distribution point.

All feeder calculations are now included in Section 2203. The general requirements state that the computed loads shall be the sum of the loads as determined for branch circuits subject to the provisions of the five modifying subsections.

Section 2203a includes a table of minimum wattages for three additional types of occupancies. These are not shown in the branch circuit table of Section 2108a. Old Table 17 did include these three occupancies in its listing.

In new Section 2203b are to be found the demand factors which may be applied to the branch circuit wattages obtained from the calculation in Section 2108a. It should be noted that these are recommendatory factors only. They may be applied as shown, but in all cases actual loading conditions will finally govern the final branch circuit and feeder size. Under all conditions, these must have sufficient capacity to carry the load current in accordance with Tables 1 and 2, of Chapter 10. This is now completely emphasized and made mandatory by the requirements set up in the next sub-section 2203bl.

In general these new demand factors have been so selected as to increase feeder sizes slightly in some cases. In most cases the feeder sizes as previously computed have been ample for actual loading conditions. Branch circuits, however, have not kept up with load trends so that it will be found that these new calculations have greatly increased the number of branch circuits. This was not discussed in the general analysis of the 1940 changes in Article 210 as it was believed this could be reviewed to better advantage at this point of the analyzation of the code changes. One example of this change can be illustrated by referring to the case of the small residence having less than 500 square feet area.

As pointed out in one of the early discussions and as shown by the example and diagram in this article, it was possible to "wire up" this small dwelling with one circuit if calculations were based on amperage assignment per outlet as set up in Old Section 2107b. Now, however, a minimum of two circuits must be installed since new Section 2109 requires a No. 12 circuit feeding only the receptacle outlets in the kitchen, laundry, pantry, dining and breakfast rooms of these dwellings. All the other outlets and lighting, of course, may be installed on the second circuit.

With one exception, these demand factors may only be applied to that portion of the branch circuit wattage obtained for general illumination. The exception is set forth in the first fine print note at the bottom of the table. This permits the application of the demand factors to the small appliance loads as obtained in the computations set up in Section 2108c. This applies, however, only to these loads in single family dwellings, and all types of multi-family dwellings, apartments and hotels included.

The second sentence in this first fine print note covers a condition which is quite prevalent. Many residences, individual apartments,

(*Continued on page* 27)

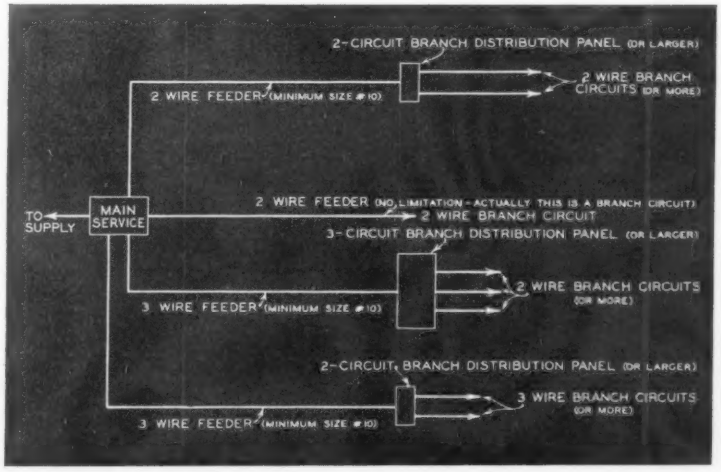


Fig. 1. The requirements of 1940 edition of the National Electrical Code with regard to feeders, as provided for in Article 220, are illustrated in this diagram.

APPLIANCE Service

Short Cuts and Time Savers In Appliance Servicing

By Allen Parker

Wattage of Heating Units At Various Voltages

Most all electric water heaters are installed on lines of standard voltage, such as 230 volts. However, it is not uncommon to make an installation such as in a downtown network system operating at 208 volts or on a special application where the voltage is different. Consequently it is sometimes difficult to obtain a unit of the proper voltage, and since they are required only infrequently, they usually require a special order from the factory and several days or weeks to get them. As it is special equipment for the factory, they in turn cannot supply them at the regular prices.

Since the wattage of a heating element varies directly as the square of the voltage, a unit rated for one voltage can be used at another voltage slightly higher or lower by rerating it in accordance with this rule.

As an example, consider an installation on a 208 volt system which requires a 1500 watt element. If the stock contains only units rated at 230 volts, the size unit of this voltage that will develop 1500 watts at 208 volts is determined as follows:

$$\begin{aligned} W &= 1500 \times (230^2/\ 208^2) \\ &= 1500 \times (52900/43264) \\ &= 1500 \times 1.223 \\ &= 1834 \text{ watts} \end{aligned}$$

This calculation indicates that a 230 volt heating unit rated at 1834 watts will develop 1500 watts when used on a 208 volt circuit. In such an instance, the correct procedure would be to use the smallest 230 volt unit in stock above 1834 watts. If a 2000 watt unit was available, for example, it could be expected to develop 2000/1.223 = 1635 watts on a 208 volt circuit and could be used satisfactorily.

The accompanying table will serve for handy reference to determine the wattage that will be developed by any particular size unit on various other voltages. Each line in the table represents a particular unit (rated at 230 volts) and the value in each column shows the wattage which that particular unit will develop at the voltage given in the column heading.

208 v.	220 v.	230 v.	235 v.
817	914	1000	1045
1022	1143	1250	1304
1226	1372	1500	1565
1431	1601	1750	1826
1635	1829	2000	2087
2044	2287	2500	2609
2453	2744	3000	3131
2862	3202	3500	3653

Safety Warning Cards Promote "Repeat" Business

Safety warning cards for the use of electrical contractors have been used effectively in one midwestern city to promote "repeat" business. These cards are placed near the service equipment or the main switch panels in the home. They give the name and address of the electrical contractor who has done the work; also the date on which the work was inspected and the name of the inspector.

The card also carries a caution on the replacement of fuses and the resetting of circuit breakers. The customer is also told that when additional wiring is installed, he should receive an affidavit certifying that the work has been done in accordance with the state's electrical law.

Effective Cleaning of Refrigerator Condensers

Too few service men give the condenser on a refrigerator due credit for the major part which it plays in the operation of the mechanism, and repeat calls often are made because of condenser trouble and failure to check it in advance. The close spacing of the fins on a condenser provide an ideal dust filter, this being especially true after a small amount of atomized oil from the machine has accumulated on it. As the dust accumulates, the cubic feet per minute of air passing through the condenser is rapidly decreased, and the air that does pass the condenser, finds the dust serving as an unusually good heat insulator. The result of such a condition is that the head pressure goes up and the pumping capacity of the compressor goes down. Frequently, the loss in capacity amounts to 20% of the total capacity and has been known to reach 90%, with continuous operation of the machine.

When such a condition exists, the natural thing to do is to clean the condenser. Many service men have adopted the splendid habit of cleaning the condenser on all jobs on which they work. The method most often used is simply the application of a brush of some type, but with a condenser made of closely spaced fins, the brush removes only the dust visible to the eye. This is especially true of condensers having two or more rows of coil in their construction, as is common on most all air-cooled commercial equipment.

The best method of cleaning a condenser is to use a high pressure air jet and blow the dust from the condenser in the reverse direction from which it accumulated or against the direction of air from the compressor motor fan.

Air may not always be available, but a small portable compressor can be built up by almost any service man from a scrap domestic refrigerator compressor. With a small air tank added to it, such as an old receiver, and a small piece of air hose and an air jet, a splendid job can always be done. In everyday use such a device will prove to be a time saver over the brush method, considering the complete job which it will do.

In addition to cleaning condensers, every service man should have such a compressor rigged up for

use as a vacuum pump when evacuating the system of a commercial installation before starting it up. Also, the compressor can be adapted easily to a paint spray gun for doing touch up work on appliances on the customer's premises. In the absence of this compressor, an ordinary automobile tire pump will be found a better substitute than the ordinary brush used for that purpose, the pump being operated with quick energetic strokes with the nozzle pointed in the reverse direction of the compressor fan.

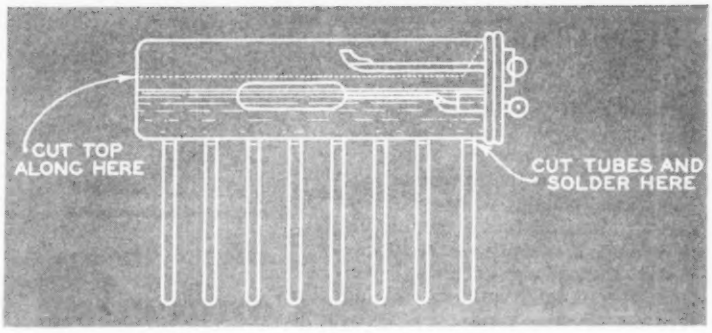
After the condenser has been cleaned, a close inspection will reveal, more than likely, a thin film of oil on the condenser. This has accumulated from oil vapor from the motor and compressor. In itself, this oil not only provides an insulation but also a trap that will quickly collect the dust again. A still more improved condition can be attained by spraying the condenser with carbon tetrachloride or something similar that will remove the oil film, after which it can be blown out again with the air jet.

A good clean condenser holds the head pressure down and the efficiency of the compressor up. Also, if a unit is allowed to operate for a long period of time in a dirty condition and with high head pressure, there is more likelihood that carbon and sludge will form on the inside walls of the condenser and make its complete replacement necessary.

Practical Device for Testing Low-Side Floats

A few years ago, low side floats were used as the dividing point on the majority of all electric refrigertion systems. It was not uncommon for the service man to change the float on any job that could not be corrected by adding refrigerant to the system. Many times the float was the source of trouble and many times it was not. If the new float failed to correct the trouble, then it was too much of a job to replace the old one on the equipment, and consequently the old one was sent back to the manufacturer for reworking.

Float valve troubles still are with us. Many float valves are being returned for repairing and recalibrating which could be done locally by the service man when work is slack and a good saving accomplished. Naturally, the first step in doing this is to prepare a device for the testing, and this can be made up at almost no cost by obtaining an old discarded flooded low side evaporator, this to be used for mounting the float valve for testing. So that the float may be accessible for adjustment, the top of the evaporator up to the facing is cut off for about two inches down, which leaves the float valve in open view.



The sketch above shows construction details for a testing device to be used for repairing and recalibrating refrigeration float valves. The top of an old flooded low side evaporator is cut away. Refrigerant tubes also are cut away and soldered closed to reduce volume of liquid required. Liquid of approximately the same specific gravity as the refrigerant is used to make the test.

Of course, ordinary refrigerant cannot be used because of several reasons: it is too volatile to handle, dangerous, and expensive. A liquid is selected having approximately the same specific gravity as the refrigerant on which the float is to be used. A solution of 50% kerosene and 50% refrigerant oil is satisfactory for testing methyl chloride floats, while carbon tetrachloride will serve nicely for testing the sulphur dioxide and freon floats.

The method of testing is to connect an air line of approximately the same pressure as the normal head pressure on the refrigerant. The air line to the float should be opened a small amount and the liquid poured in slowly until the float completely closes off the air. The liquid level at this time should be at about the center of the float ball and it can be bent slightly up or down to recalibrate. Many floats will have a pitted needle and seat which should be replaced before recalibrating.

In order that the test may be made several times without disturbing the float valve, a small hand valve may be soldered in the bottom of the evaporator and the fluid drawn off and poured back in as many times as the test is desired. Since carbon tetrachloride is somewhat expensive, the volume used in making this test can be materially reduced by cutting off the refrigerant tubes of the evaporator and soldering up the holes.

Always use the proper needle for the particular type of float being repaired. A needle slightly short would cause the evaporator to run too high a liquid level and would most likely cause the suction line to frost, while one too long would give poor refrigeration.

Calculating Feeder Loads under 1940 Code

(*Continued from page* 25)

and hotel suites are served with two or more sub-feeders extended from a service entrance to several distribution cabinets located at various points in the dwelling. Each of these sub-feeders must provide for a minimum of 1500 watts for small appliance loads. This is a very logical requirement in that it recognizes the condition that some small electrical appliance has been developed for operation and utilization in almost every room in a home; small bathroom electrical heaters, electric razors and vacuum cleaners for use almost anywhere in a home, heating pads for bed use, to mention but a few of the myriad of electric servants available.

The second fine print note is a specified requirement based on the general principle established in the following sub-section 2203-bl. As pointed out above, feeders must have sufficient capacity for their operable connected load. This note reiterates this principle specifically for those areas which would require all their lighting facilities to be used at one time,

such as ball rooms, dining rooms (the intent being public restaurants, etc.) operating rooms, and similar locations. This note was derived from the first and fourth fine print notes appended to old Table 17. These old notes required that the main feeder calculations include these loads on a 100% demand factor basis. The new note makes these 100% demand factor calculations specifically applicable only to the subfeeders for these loads.

Paragraph "e" of this section is derived from old 2202b. The demand factors for the small appliance loads in old 2202bl have been included in the general illumination demand factors of new Section 2203b as discussed above. New Section 2203c, therefore, deals only with the electric ranges, as previously covered by old paragraph "b2" of Section 2202.

No change has been made in the general feeder requirements for motor loads in new Section 2203d. This is verbatim the same as old Section 2202c.

The paragraph "e" is but a cross indexing note for the calculations for the neutral feeder size. This is covered fully in the following Section 2204 and is practically the same as old 2203. The only change is in the reference to new Section 2203 in place of 2202.

New Section 2205 is the same as old 2204. However, a second sentence has been added and this serves as a cross reference to the general wiring rule established in Section 3052, viz., all wires of alternating current circuits must be kept within the same enclosed metal raceway.

MOTOR Service

Connecting Diagrams for Lap Wound A-c Motors

By A. C. Roe

Railway Motor Engineer
Westinghouse Electric & Mfg. Co.

WITH this article we present the ten pole, three phase, five parallel, three lead diagrams. In addition, a table for use in figuring any possible voltage connection is included to assist in the discussion on possible voltage changes by reconnecting from star to delta, or delta to star, etc.

In Fig. 51, we present the ten-pole, three-phase, five-parallel star, three-lead, standard single voltage diagram. This diagram has four rings: the star ring with fifteen star connections, and the three line lead rings, A, B and C, with five connections each. There are also fifteen short pole phase group jumpers. To make a neat connecting job, the star ring is put on first, then the short jumpers, starting with the one between groups 1 and 4, then groups 3 and 6, 5 and 8, etc. This makes it possible to lay the jumpers neatly. Next, the line leads rings are applied in any order desired.

To convert the five-parallel star to a five-parallel delta connection requires cutting the star ring into three sections. This can be done by cutting off the star connections from groups 6-12-18-24-30, connecting these together to the B-line lead ring. Next cut off the star connections from groups 2-8-14-20-26; join them together; and connect to the A-line lead ring. This leaves the star leads of groups 4-10-16-22-28 connected together, which should then be attached to the C-line lead, making a five parallel delta connection similar to Fig. 52.

Fig. 52 is the ten-pole, three-phase, five-parallel delta, three-lead standard single-voltage diagram. This consists of three rings,

Table I—Multiplying Factors for Reconnection of Three-Phase Motors for Different Line Voltages (4 to 12 Poles)

Original Connection	MULTIPLYING FACTORS TO OBTAIN NEW VOLTAGE FOR RECONNECTION																	
	Series		2 Par.		3 Par.		4 Par.		5 Par.		6 Par.		8 Par.		10 Par.		12 Par.	
	Star	Delta	Star	Delta	Star	Delta	Star	Delta	Star	Delta	Star	Delta	Star	Delta	Star	Delta	Star	Delta
Series Star	1.00	.58	.50	.29	.333	.193	.25	.145	.20	.116	.167	.096	.125	.0725	.10	.058	.084	.048
Series Delta	1.73	1.00	.865	.50	.576	.333	.432	.25	.346	.20	.289	.167	.216	.125	.173	.10	.144	.084
2 Par. Star	2.00	1.16	1.00	.58	.666	.386	.500	.29	.40	.232	.334	.193	.25	.145	.20	.116	.167	.097
2 Par Delta	3.46	2.00	1.73	1.00	1.152	.666	.865	.50	.692	.40	.578	.334	.432	.25	.346	.20	.288	.167
3 Par. Star	3.00	1.73	1.50	.865	1.00	.577	.75	.435	....	....	.500	.288	....	.....	....	....	.25	.145
3 Par. Delta	5.19	3.00	2.60	1.50	1.73	1.00	1.30	.75	....	....	.865	.500	....	.....	....	....	.432	.25
4 Par. Star	4.00	2.32	2.00	1.16	1.33	.772	1.00	.58	....	....	.66	.386	.50	.29	....	....	.33	.193
4 Par. Delta	6.92	4.00	3.46	2.00	2.30	1.33	1.73	1.00	....	....	1.15	.66	.865	.50	....	....	.577	.33
5 Par. Star	5.00	2.90	2.50	1.45	....	....	....	....	1.00	.58	....	....	....	.....	.50	.29	....	....
5 Par. Delta	8.65	5.00	4.32	2.50	....	....	....	....	1.73	1.00	....	....	....	.....	.865	.50	....	....
6 Par. Star	6.00	3.46	3.00	1.73	2.00	1.15	1.50	.87	....	....	1.00	.577	....	.....	....	....	.50	.29
6 Par. Delta	10.38	6.00	5.19	3.00	3.46	2.00	2.60	1.50	....	....	1.73	1.00	....	.....	....	....	.29	.50
8 Par. Star	8.00	4.64	4.00	2.32	....	....	2.00	1.16	....	....	....	....	1.00	.58	....	....	....	....
8 Par. Delta	13.84	8.00	6.92	4.00	....	....	3.46	2.00	....	....	....	....	1.73	1.00	....	....	....	....
10 Par. Star	10.00	5.80	5.00	2.90	....	....	....	....	2.00	1.16	....	....	....	.....	1.00	.58	....	....
10 Par. Delta	17.30	10.00	8.65	5.00	....	....	....	....	3.46	2.00	....	....	....	.....	1.73	1.00	....	....
12 Par. Star	12.00	6.92	6.00	3.46	4.00	2.30	3.00	1.73	....	....	2.00	1.15	....	.....	....	....	1.00	.57
12 Par. Delta	20.76	12.00	10.38	6.00	6.92	4.00	5.19	3.00	....	....	3.46	2.00	....	.....	....	....	1.73	1.00

each with ten connections to it, and fifteen short pole phase group connections.

To convert the five-parallel delta to a five-parallel star connection, disconnect the C leads of groups 4-10-16-22-28 from the C lead, then the B leads of groups 6-12-18-24-30 from the B lead, and the A leads of groups 2-8-14-20-26 from the A line lead. Connect all fifteen leads together to form the star ring and the result is a five-parallel star connection.

With the delta connection, one phase of the winding is connected across any two line leads as shown in Fig. 52. Thus with the delta connection, the turns of each phase develop full line voltage. But with a star connection it requires the turns of two phase groups to develop line voltage.

Thus with a star connection, the voltage per phase group winding is 1.73 of the line voltage, and the phase current is the same as the line current. A star connection, therefore, requires fewer turns of a larger size wire per phase than a delta connection. With a delta connection, the voltage per phase is also the line voltage but the current per phase is 1.73 times the line current.

Thus, these two internal differences can be employed in many cases to change a winding for operation on different voltages. Table 1 indicates the factors to use.

The first vertical column of Table 1 gives the original connection of the motor under consideration, using the present line voltage. In this column are listed all possible two or three phase connections for 4, 6, 8, 10 or 12 poles. For two phase windings it would be simpler to use the table in last month's article but this table can be used by ignoring the star or delta notes and considering only the series 2-parallel, 3-parallel, etc., lines only.

Along the top of Table I the connections are repeated, with a separate column under each connection for a star or delta connection factor.

For example, consider the top line series star, and work along to the right. Under series star we find the figure 1.00 which means no change in voltage but under series delta we find the factor .58, which means that if we change a 220-volt motor connected series star to series delta, the new line voltage will have to be 220 x .58 or 127.6 volts or too high for 110 volt application.

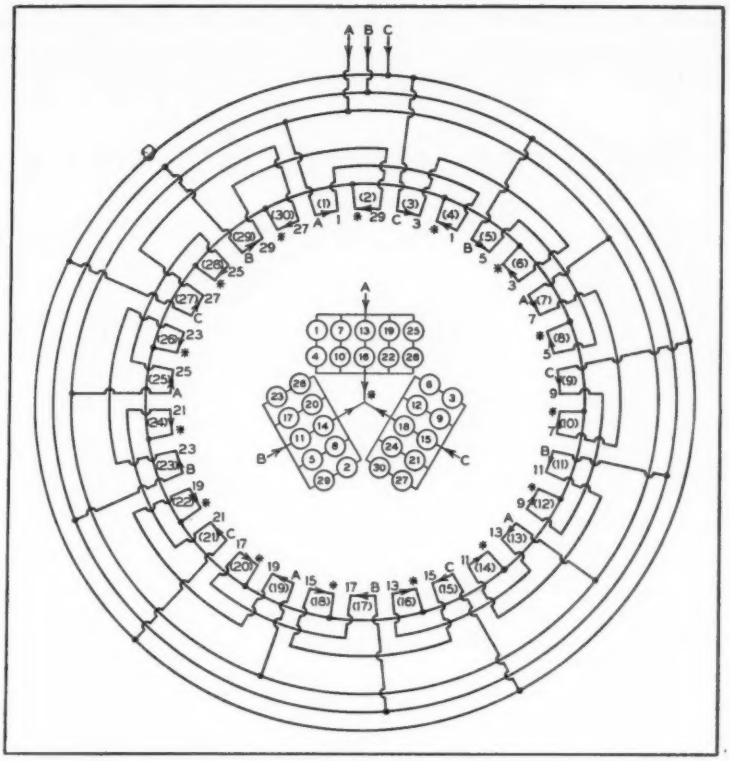


Fig. 51. Five-parallel star connection for 10-pole, three-phase lap-wound induction motor with three leads.

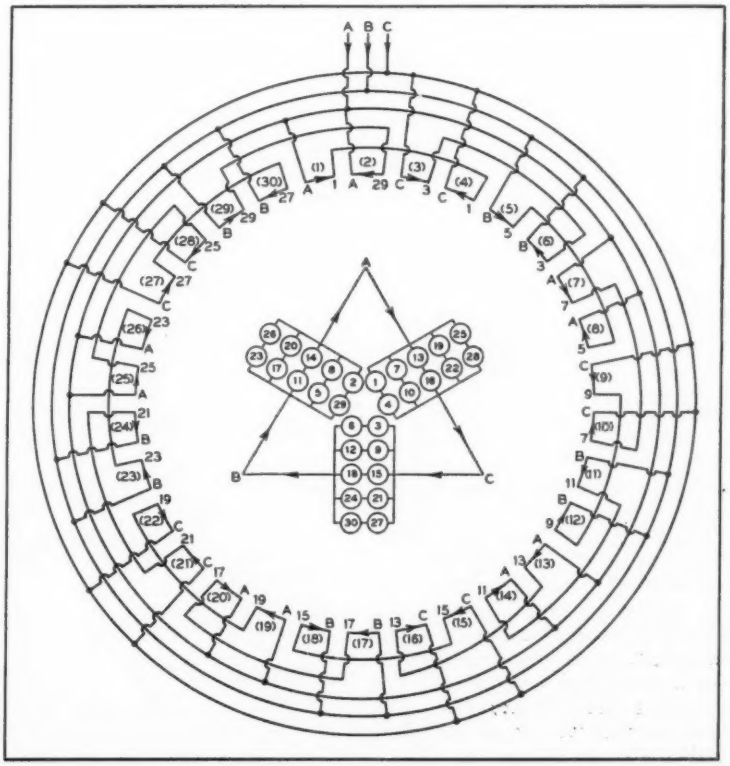


Fig. 52. Five-parallel delta connection for 10-pole, three-phase lap-wound induction motor with three leads.

ENGINEERING SECTION

Distribution System Economics

Part 3—Primary System Design

By P. E. Benner

Central Station Department
General Electric Co.

THE ECONOMIC consideration of the design and layout of primary circuits must take into account the substation at one end and the distribution transformers at the other. A low investment in the primary circuits themselves is not necessarily an indication of the most economic design, as such a design may require a disproportionately larger investment in distribution transformers and accessories, and substation facilities.

Higher primary voltages reduce primary copper costs, but increase the cost per kva of distribution transformer as shown by Table I. The use of wye-connected circuits instead of delta attains the advantage of higher voltage without incurring this added cost. (Compare Fig. 1-b and Fig. 1-e.)

In connection with the question of circuit voltage, it should be noted that while 4160-volt wye is more economical than 2400-volt delta in entirely new construction, 4800-volt delta is usually more economical than 4160-volt wye. Distribution at 4800 volts not only has the advantage of higher three-phase voltage, but also it has a 4 to 1 advantage in voltage drops on the single phase laterals at 4800 volts instead of 2400 volts. This is particularly important as the ultimate loading of a feeder is limited by voltage drop in the load area as frequently as by the current carrying capacity of the circuit conductors and connected equipment.

The length of the main or trunk circuit to the load area has an important bearing on the cost of the primary circuit. This length may be varied considerably by the size and location of the substation. In selecting a substation location, a saving of several hundred feet in the length of each outgoing feeder will frequently more than make up for the slightly higher cost of a more advantageously located substation site.

In the final analysis, the true measure of economic primary design is the cost per kva of the load carried. There is frequently a temptation to be influenced by a low cost per kva of capacity of feeder circuits in planning the circuit size and substation equipment. Full consideration should always be given to the question of whether the existing and expected load density will permit loading the circuit to capacity without making large expenditures in the load area to keep the voltage drop within the desired limits. If the extra capacity in a 250-ampere or 300-ampere circuit over a 200-ampere circuit cannot be economically utilized, it is too expensive at any price.

Voltage Drop Limitation

Too much emphasis cannot be placed on the limitation of feeder loading imposed by voltage drop. This limitation is not as easily recognized as the limitation of current capacity, but it has the important effect of loss in revenue. Urban feeders should be designed for maximum drop of 2% to 3% in the load area (between the first and last transformer) when fully loaded. In other words, the highest voltage applied to any distribution transformer should not exceed the lowest voltage applied to any other distribution transformer on the same feeder by more than 2% to 3%. This is based on maintaining the customer voltage between the limits of plus or minus 3% to 3½%, or from approximately 112 to 119 volts for a normal voltage of 115.

Where radial feeders do not have the benefits of individual phase regulation, such as would be obtained by the use of 2 open-delta-connected, single-phase regulators on a 3-phase, 3-wire delta circuit, or three wye-connected, single-phase regulators on a 3-phase, 4-wire, wye-connected circuit, the normal unbalance in loading frequently results in variations of 2% to 3% in the phase voltages in the load area. The permissible primary voltage variation used up in this way can be made up at excessive cost by reducing the drop in distribution transformers and secondaries, but more frequently it is not compensated for at all and results in lower customer voltage and lost revenue.

Excessive voltage drop in the load area can be reduced by the use of feed backs and larger size conductors, or it can be compensated for by means of supplementary regulators. Of these alternatives, changing copper size is usually the

Table I—Additional Cost per KVA for Distribution Transformer for Voltages Higher than 2400 Volts

Trans. Size, kva	4800 Volts	6900 Volts	11,000 Volts
5	$ .80	$3.20	$ 6.40
Plus 2 LA & 2 CO	2.40	4.35	13.98
10	$ .90	$2.90	$ 4.50
Plus 2 LA & 2 CO	1.70	4.47	8.29
25	$ .76	$1.96	$ 2.68
Plus 2 LA & 2 CO	1.07	2.63	4.19
50	$ .54	$1.34	$ 1.76
Plus 2 LA & 2 CO	.70	1.69	2.52
100	$ .36	$ .80	$ 1.01
Plus 2 LA & 2 CO	.44	.97	1.25

least effective. The use of supplementary or branch line regulators has been found economical in many cases, especially in low load density areas.

Service Continuity

Although more difficult to evaluate from an economic standpoint, the importance of continuity of service in promoting customer good will and normal load growth is universally recognized. The economic problem in this connection is usually one of determining how to get the greatest improvement in service for the money spent.

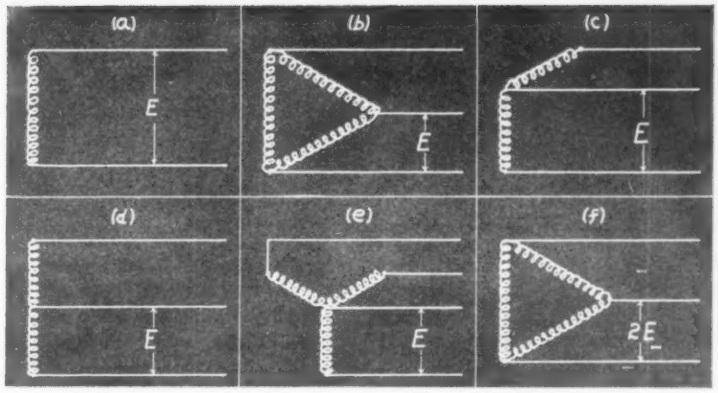
Before much progress can be made in this direction, it is necessary to have a good idea of the nature and cause of outages. Outages caused by temporary faults can be effectively eliminated by the use of reclosing devices. On overhead circuits, with a normal ratio of temporary to total faults, that is, .5 or larger, the maximum return per dollar invested is usually obtained by equipping substation feeder breakers for automatic reclosing.

Out on the feeder circuit, substantial improvements in service can be made by the proper use of sectionalizing devices. Just where and what type should be used to obtain the greatest reduction in outages depends largely on the ratio of temporary to total faults. The advantage of using an automatic reclosing device instead of a single element sectionalizing fuse decreases as the ratio of temporary to total faults decreases. This is shown in Table II which gives the per cent reduction in outages obtained by various numbers of automatic reclosures for various ratios of temporary to total faults.

Further reference to Table II shows that the first reclosure produces the maximum improvement in service which amounts to a minimum of three times the improvement of the 2nd reclosure, six times the improvement of the 3rd, etc. The low relative cost of the 2-element reclosing fuse, together with the greater improvement obtained from the first reclosure as mentioned above, makes it possible to obtain at least twice the improvement per dollar invested for the 2-element reclosing device as for those making a larger number of reclosures.

The proper use of sectionalizing fuses will result in a worthwhile reduction in the overall kva-hours of outage on the entire feeder by localizing the effect of permanent faults. In applying sectionalizing fuses, either in branch circuits or in the main feeder circuits, it is important to make sure that their use will result in reducing the overall customer-minutes of outage of the entire feeder.

A simple rule which can be used in this connection is that the installation of branch line or sectionalizing fuses will reduce the overall kva-hours outage of the feeder whenever the per cent load in the branch or in the circuit beyond the fuse is less than the per cent permanent faults in that branch or in the section of the feeder beyond the sectionalizing fuse. This rule assumes the use of an automatic reclosing breaker at the substation.



Comparison of line current, voltage drop, and line loss for various types of circuits. Total load and impedance per conductor are the same in each case:

(a)		(b)		(c)	
Line Amps	100%	Line Amps	57.6%	Line Amps	50.0%
Voltage Drop	100%	Voltage Drop	50.0%	Voltage Drop	37.5%*
Line Loss	100%	Line Loss	50.0%	Line Loss	37.5%
(d)		**(e)**		**(f)**	
Line Amps	50.0%	Line Amps	33.3%	Line Amps	28.8%
Voltage Drop	25.0%	Voltage Drop	16.6%	Voltage Drop	12.5%
Line Loss	25.0%	Line Loss	16.6%	Line Loss	12.5%

* Comparison at 1.00 power factor only

Table II—Probable Reduction of Outages Resulting From the Use of Automatic Reclosing Devices

Ratio of Temporary to Total Faults	Number of Reclosures: 1	2	3	5	9	Infinity*
.1	9%	10%	10%	10%	10%	10%
.2	17	19	20	20	20	20
.3	23	28	29	30	30	30
.4	29	36	38	40	40	40
.5	33	43	47	49	50	50
.6	37	49	54	58	60	60
.7	41	55	61	66	69	70
.8	44	59	66	73	78	80
.9	47	63	71	79	85	90
1.0	50	67	75	83	90	100

* Self Reset

Summary

The most important factors in the economic design of feeder circuits may be briefly summarized as follows:

1. The cost per unit of load actually carried is the real measure of economic primary system design.

2. Feeder load is frequently limited by the voltage drop in the load area rather than the current carrying capacity of the circuit and connected equipment.

3. The primary design which will require the least amount of load

(*Continued on page* 80)

(1) Busduct Distribution Systems: Complete specifications and descriptive material on Feeder Busducts, Plugin Busducts, and Plugin devices and accessories are included in this new 16-page folder designated as Bulletin No. 61. **Frank Adam Electric Co., St. Louis, Mo.**

(2) Fluorescent Lighting Units: An 8-page folder describing The Miller "50 Foot Candler," the first 50 foot-candle RLM continuous fluorescent lighting equipment for general illumination. It describes a new unit available in single or double length wiring channels for two or three 40-watt lamps. **Miller Electric Co., Meriden, Conn.**

(3) Control Equipment: The September issue of the "Trumbullist" contains a wide range of electrical control equipment. New lines included in this issue are the "MH" multi-breaker power panel, new motor control centers, and 3-phase, 4-wire "M-2" multi-breakers. **The Trumbull Electric Mfg. Co., Plainville, Conn.**

(4) Shop Parts Cabinet: Shop boxes and stack-units designed to save time in handling small parts are described in this new catalog. **All-Steel-Equip Company, Aurora, Ill.**

(5) Switches and Motor Control: The new 64-page, September 1940 edition of the popular "Quick Selector" catalog, containing a wide range of safety switches, No-Fuze breakers, multibreakers, distribution panelboards, and motor controls, has just been announced. The catalog is designated as No. 30-000. **Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.**

(6) Fluorescent Lighting: The new Hygrade Miralume catalog just off the press not only gives complete data on the models available in the Miralume line but also includes valuable design information that will help anyone lay out a modern fluorescent lighting installation. **Hygrade Sylvania Corp., Miralume Division, Ipswich, Mass.**

(7) Rural Line Devices: Bulletin No. 101 covers a complete assortment of rural line protective devices such as cutouts, arrester gaps, reclosers, etc. Complete data on ratings and dimensions are included. **W. N. Matthews Corp., St. Louis, Mo.**

(8) Dilec Safecote Wire: Engineering data and other information valuable to contractors and engineers is included in this 35-page booklet on Dilec Safecote marked and measured wire which covers all types of small diameter wire including synthetic. **National Electric Products Corp., Pittsburgh, Pa.**

(9) Feeder Voltage Regulators: This new bulletin, B-6065, gives the latest information on transformer type of distribution feeder voltage regulators. It describes construction, operating characteristics and advantages of this equipment, and gives engineering and price information on a wide range of sizes for 2400 to 6900 volts. **Allis-Chalmers Mfg. Co., Milwaukee, Wis.**

(10) Air Conditioning Coils: Complete instructions for the selection of direct-expansion cooling coils needed to meet the full range of air conditioning requirements are contained in a new 36-page booklet now available from the air conditioning and commercial refrigeration department. **General Electric Co., Bloomfield, New Jersey.**

(11) Motor Starters: Colt magnetic motor starters for across-the-line use and manually operated motor starters are discussed in two new bulletins recently announced. Ask for bulletins 404 and 504. **Colt's Patent Fire Arms Mfg. Co., Electrical Division, Hartford, Conn.**

(12) Home Wiring Manual: A new manual on modern home wiring practices assuring electrical adequacy has just been made available which contains a detailed description of G-E home wiring methods, a guide for checking and writing specifications, and material specifications for home wiring, as well as several suggested ways of proving the adequacy of the installation afterwards. Ask for Wiring Handbook, No. 51-4014. **General Electric Co., Appliance and Merchandising Dept., Bridgeport, Conn.**

Catalogs and Bulletins Available to the Trade

A wide range of catalogs and other publications have been made available to the trade by the electrical manufacturers.

ELECTRICAL SOUTH will be pleased to assist you in obtaining copies of the publications that are of particular interest to you. Simply read through the descriptive items, noting the numbers of those that you want. Draw a circle around these numbers on the coupon below, pin it to your blank letter head, and mail to us. We'll see that you get the publications.

Editor, ELECTRICAL SOUTH,
1020 Grant Building
Atlanta, Ga.

Dear Sir: Please ask the manufacturers to send me copies of the booklets indicated below:

January, 1941: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

Name .....

Address .....

City & State .....

(13) Magnetic Circuit Breakers: Catalog No. 40 describing the complete line of Heinemann "Re-Cirk-It" fully magnetic circuit breakers is now available upon request. In addition to listing the various types of breakers available, the catalog contains much helpful information on both time delay and instantaneous type breakers. **Heinemann Circuit Breaker Co., Trenton, N. J.**

(14) Condensing Units: A new 56-page booklet entitled "Low Cost, Dependable Condensing Units," describes units from 5 to 60 hp for both refrigeration and air conditioning installations. It includes performance and application data, compressor accessories, and considerable engineering information for the design of large-scale refrigeration and air conditioning systems. **General Electric Co., Air Conditioning and Commercial Refrigeration Dept., Bloomfield, N. J.**

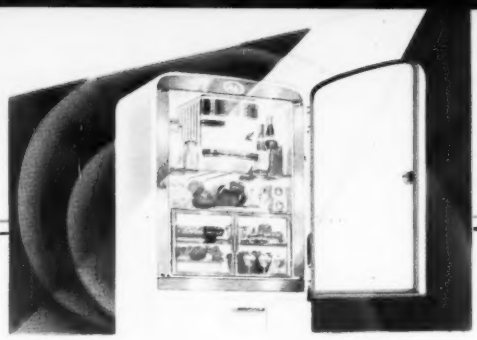
(15) Burndy Electrical Connectors: In this fifteen page booklet entitled "Electrical Connector Guide" is a series of charts that make it easy to select the proper connector for a given application. The booklet includes brief descriptions of the advantages of the various types of connectors listed. **Burndy Engineering Company, New York City, N. Y.**

(16) Goodrich Staklites: Bulletin No. 92 just issued, describes the Goodrich Staklite, a new lighting fixture especially designed for the illumination of rows of book stacks and similar applications. In addition to complete specifications, the bulletin includes protographs of several typical installations. **Goodrich Electric Company, Chicago, Illinois.**

(17) Lockers and Files: New literature is now available on A-S-E lockers for commercial and industrial concerns and A-S-E Aurora Files in the commercial grade of cradle suspension equipment that is sold at the lower utility grade price. Copies of these circulars are available upon request. **All-Steel-Equip Company, Aurora, Illinois.**

(18) Circle "T" Material: A new circular designated as No. 323 has been issued describing and illustrating the entire line of Trumbull Multi-Breaker Load and Service Centers. The booklet covers five different types of Multi-Breaker equipment: MO, M-1, M-2, MB and MBM. **Trumbull Electric Manufacturing Company, Plainville, Conn.**

(19) Science Banishes The Dishpan: This is the name of Hotpoint's new visualizer for homemakers, containing provable facts and testimonials on electric kitchen sanitation equipment. The book compares old-fashioned methods with new automatic methods and includes a profusion of photographs showing how and why modern electric dishwashers and kitchen waste exits banish two of the most burdensome household tasks. **Edison General Electric Appliance Company, Chicago, Ill.**



Another Frank Statement

An announcement of Kelvinator's 1941 Program and how it assures even greater profits to Kelvinator retailers

by FRANK R. PIERCE, General Sales Manager
Kelvinator Division, Nash-Kelvinator Corporation

LAST YEAR Kelvinator retailers made money. In fact, with sales more than 2¼ times those of the year before, we are told by many retailers that this was their best profit year in the refrigeration business.

This was the natural and expected result of Kelvinator's radically different 1940 Program—which brought to the industry as a whole the greatest volume it had ever enjoyed.

It is only natural that the industry today should be watching Kelvinator with the keenest interest—waiting for Kelvinator's next statement of policy.

Now is the time to make that statement.

• *The Kelvinator plan of 1940 was only the first step in a far more inclusive program*—one that has been conceived from the beginning with the needs of the refrigerator retailer—the man who built our industry—as the primary consideration.

I have made the statement many times that it is within the power of the manufacturer and the distributor to relieve most of the problems refrigeration retailers are faced with. I make that same statement again now and say that Kelvinator is determined to continue its efforts in that direction.

Because retailers told us there were too many models, one of the outstanding accomplishments of last year's program was our concentration on fewer models—the big six and eight cubic foot models that people really want.

• *This year we have condensed an entire line of refrigerators into exactly eight models*—six six-footers and two eight-footers. Your inventory investment is less—our manufacturing program is again simplified.

Because we were determined to enable Kelvinator retailers to meet all types of price competition, the announcement last year of Kelvinator's new prices electrified everyone who had anything to do with refrigerators. This year's prices are just as sensational.

• *Kelvinator not only has a more effective price program again*—but even more important *we have built enormously greater value into every model in the line.*

Which brings me to one of the most significant features of the entire 1941 platform.

Salesmen had told us it was almost impossible to logically justify the price differences between low-priced models and fully equipped models.

The Kelvinator Step-up Plan of 1940 you hailed as the best ever devised. In fact, it proved so successful that 80 per cent of all Kelvinator sales averaged $160.23.

• *The Kelvinator Step-up Plan of 1941 is a salesman's dream.* Briefly, it is based on a price scale in which the exact *value* of the features in every model determines its cost.

Kelvinator salesmen will not have to justify a substantially higher price on the basis of obviously inexpensive gadgets.

The 1941 Kelvinator Step-up Plan is so logical and so easy to visualize that we say Step-up *Buying* will replace Step-up *Selling*.

And the models which your prospects will *buy* most readily are the ones on which your *profits* are the *greatest*.

Retailers have told us that there are too many competing outlets for electric refrigeration.

Last year we inaugurated a plan to limit the number of dealers in each community so that each dealer could obtain a sufficient volume at full retail prices to make a real profit. This plan proved highly successful.

• *This year we are projecting an even more comprehensive system of protected markets,* which can be summed up in the phrase—"A dealer for every market—a market for every dealer."

I come now to the climax of our 1941 story.

No plan—no program—however carefully conceived and executed, can be lastingly successful without an outstanding product.

Kelvinator *has* that product.

• *A brand new refrigerator.*

• *A new kind of refrigerator.*

And, frankly, we're as proud of the 1941 Kelvinator as a father with his first son.

But no words of ours can possibly give you a true picture of the beauty of this new and utterly different 1941 Kelvinator. When you see it I think you will agree with the people who call this "The Most Beautiful Refrigerator in the World."

• And, in addition, Kelvinator retailers will welcome the news that for 1941 the Kelvinator Electric Range Program will be just as aggressive and just as complete as the Kelvinator Electric Refrigerator Program. The same principles apply—fewer models—increased production—lower prices—and a profitable franchise.

We're getting off to a fast start in 1941.

And I frankly believe that this is going to be the biggest and most profitable year we and our retailers have ever enjoyed.

We've burned a lot of midnight oil to create an unbeatable combination of product, price and strategy.

This is the year to cash in.

I suggest that you get in touch immediately with your nearest Kelvinator distributor or factory branch.

Or, if you like, communicate with me direct.

Frank R. Pierce

General Sales Manager
KELVINATOR DIVISION
Nash-Kelvinator Corporation, Detroit, Mich.

Introducing a New K

STEP-UP BUYING REPLACES STEP-UP SELLING

Model SS-6—A big 6¾ cu. ft. model. New Kelvalyte trim on cabinet throughout to replace old-style breaker strip. There's a big Moonstone glass chill tray under the Freezer Unit. Two extra-fast Freezing Shelves give an 84 ice cube capacity—9 lbs., 11.8 sq. ft. shelf area. *Plus* all of the basic 1941 Kelvinator features listed at the right. . . . . Price is only **$114.75***

Model D-6—A 6¾ cu. ft. equipped model. Has a big Sliding Kelvin Crisper with porcelain top. Easy-to-clean, stainless steel Cold-Ban. Moonstone glass Cold Chest. Two extra-fast Freezing Shelves. 4 Pop-out Ice Trays with 64 ice cubes—8 lbs. capacity. 11.8 sq. ft. of shelf area. *Plus* all of the famous basic 1941 Kelvinator features. . Only **$124.95***

Model S-6†—*Completely equipped* 6¾ cu. ft. model. 5-Way Magic Shelf. Glass-covered Sliding Crisper with increased capacity. Moonstone glass Meat Chest with glass cover. Stainless Steel Cold-Ban. Vegetable Bin. Sliding half-shelf. 4 Pop-out Ice Trays with 64 ice cubes—8 lbs. capacity. 11.8 sq. ft. shelf area. 2 extra-fast Freezing Shelves. Plus all basic 1941 Kelvinator features. . Only **$139.95***
*In 8¾ cu. ft. size Model S-8 only $179.95**

FOR months now the little man in the Kelvinator ads has been saying "You ain't seen nothin' yet."

Well, here it is—the answer to a merchant's prayer—a sweetheart in gleaming enamel and stainless steel and crystal-clear glass.

And a step-up plan so logical—so fool-proof—that you no longer have to *sell* them up—they *buy* up!

• The '41 Kelvinator not only *looks* different—it *is* different.

The cabinets are one piece sides and top, welded, rigid steel—not a tooth-pick of wood anywhere. And although sizes have been increased so that a six-foot model is now more nearly seven feet in size, the rear of the shelves are inches nearer the front than before.

And around the door opening is the gleaming Cold-Ban of Stainless Steel, which eliminates some 80 hard-to-clean screw-heads found on conventional refrigerators.

• Look at the new Kelvinator again—for *Extras*.

From Model SS-6 to Model D-6—an easy jump of just ten dollars—and your customers get a big Sliding Crisper—Stainless Steel Cold-Ban—Moonstone Cold Chest—4 Pop-out Ice Trays.

• Then step up to the famous model S-6—(counterpart of the most popular model offered to the public all last year)—an easy jump of just fifteen dollars—and look again. A new kind of Sliding Crisper with a clear-glass cover . . . 30% bigger than last year. An amazing new Magic Shelf that gives you five finger-tip adjustments and makes possible one of the cleverest and easiest demonstrations ever devised. Salesmen get a big kick out of this easy-to-do Magic Show. And underneath—a Vegetable Bin that holds a bushel and a quarter of dry vegetables.

• Then step up to Model R-6—a jump of only $15 and see what *Extras* you can offer. This used to be a $30 to $40 jump at the very least.

Ninety-nine cubes of ice—12 pounds—50 per cent more than the S-6—not just one Crisper but *two*, covered in gleaming glass—a Removable Freezer Shelf—a double width Dessert Tray—Complete Deluxe Equipment.

• Step up again—and you have the PS-6—twin of the S-6 except that it's a *Porcelain* cabinet for only $20 more.

• Then move on to the crowning achievement of the Kelvinator line—the Moist-Master for 1941—a new kind of refrigerator and a new kind of refrigeration.

It's just twenty dollars higher in price—and it's so beautiful it takes your breath away.

Shelves are of crystal clear glass. *And* it offers an entirely new principle of refrigeration.

In addition to the coils that freeze ice, there's a separate set of coils concealed in the walls. These *refrigerating* coils maintain correct humidity and temperature *throughout*. No

Kind of Refrigerator

1941 Kelvinators have these Important Features

One-Piece sides and top, welded cabinet construction—no seams—no crevices to collect grimy dirt.

All-Steel cabinets—there's not a tooth-pick of wood.

Gleaming Permalux exteriors, with Porcelain-on-steel interiors. (Model PS-6 has Porcelain-on-steel *exterior* and *interior*.)

New automatic Polar Light that lights up the interior of the Freezer Unit as well as the cabinet.

Space for Frozen Foods.

Stainless Steel, High-Speed Freezer with Porcelain-finished door.

Kelvin Cold Control with 13 settings and "off".

We believe the famous Polarsphere Sealed Unit has the greatest record in the industry for service-free performance.

Porcelain Model PS-6—With all features of S-6 *plus* porcelain-on-steel exterior. . Only **$159.95***

Model R-6—Complete *Deluxe* equipment and styling. 6¾ cu. ft. size. 99 ice cubes—12 lbs.... 50% more than S-6. Not just one but *two* glass-covered Sliding Crispers. 5-Way Magic Shelf. Stainless Steel Cold-Ban. Vegetable Bin. Moonstone glass Meat Chest with glass cover. 2 extra-fast Freezing Shelves. 4 Pop-out Ice Trays, plus double width Dessert Tray. 12.6 sq. ft. shelf area. . . . . Only **$154.95***

Moist-Master Model M-8—6¾ cu. ft. in size. Has glass enclosed Cold-Mist Freshener. All shelves of heavy crystal-clear glass. Moonstone glass Meat Chest. 2 extra-fast Freezing Shelves. 4 Pop-out type Ice Trays, plus double width Dessert Tray. 99 cubes—12 lbs. capacity. 12.6 sq. ft. shelf area. Stainless Steel Cold-Ban. Vegetable Bin. . Only **$179.95***

*In 8¾ cu. ft. size Model M-8 has 4 Speedy-Cube type Ice Trays plus double width Dessert Tray. 107 cubes—12 lb. capacity. Only $209.95**

Prices suggested are for delivery in the kitchen with 5 Year Protection Plan. State and local taxes are extra. Prices are slightly higher west of the Rockies.

need to cover dishes. In the super-moist glass-enclosed Cold-mist Freshener, still air, wall-cooled, guards food freshness . . . protects precious vitamins.

• Add to these big 6-cubic ft. Kelvinators the two eight-foot models—and you have a model to meet *every* requirement.

You have, in fact, *Step-up Buying*.

• For each successive model in the line is *easier* to sell than the model before it.

You can see right now why Kelvinator retailers are in for a whale of a big and profitable year.

• It's the most important *new* refrigerator achievement in years. It makes the owners of conventional refrigerators dissatisfied. It offers definitely and demonstrably *more* of *everything*.

And we're not going to hide our light under a basket, either.

Kelvinator today is *News* and we're going to make sure that that news gets the break it deserves.

• Four-color magazine spreads and pages, Newspapers, Spot-Radio—all will blast out the Kelvinator message. "Look at the Beauty—Look at the Extras—Look at the Price . . . Get More . . . Get Kelvinator."

• There it is—Product—Price—and Selling Punch. Add to it the one all-important ingredient—You—the Progressive Retailer—and you have the Success Story of 1941.

Look at the Beauty! Look at the Extras! Look at the Price!

A MARKET FOR EVERY DEALER • A DEALER FOR EVERY MARKET

and a Radically New Range Program

A complete Line of Ranges Telescoped into Three Amazing Values

Model ER-411—One-piece "wrap-around" steel body—5-Heat silver contact surface unit switches—combination oven switch and thermostat with automatic preheat cut-off—"Broil" and "Bake" pilot lights—2-unit oven—Fiberglas insulation—6-Quart Scotch Kettle—Ball-bearing storage drawer.

Model ER-413—Popular priced model with all features of Model ER-411, and many extras—7-Heat Surface Unit switches with individual flood lights that indicate when switches are "on"—Deluxe-type Scotch Kettle with self-basting lid—Automatic light in oven—Three ball-bearing storage drawers—Non-glare top lamp.

Model ER-417—All Deluxe "extras"! Built-in Cookin Timer combining electric clock, computing Timer, a "Minute Minder". Selector Switch connecting Tim with oven, Scotch Kettle or appliance outlet—Warme Drawer with automatic temperature control—Delu Scotch Kettle with insert pan, basket, and thermomet

Suggested prices delivered in the kitchen east of Rockies—slightly higher west of Rockies. Wiring, if any, and state and local taxes extra.

"IT worked with refrigerators—now let's apply it to ranges!" That summarizes the 1941 strategy for the Kelvinator Electric Range.

For *this* is Kelvinator's year.

The '41 range program is just as logical, just as certain of success as that which startled the Refrigeration Industry last year.

The objectives are the same—to crack open a vast new market—to meet and defeat the competitive price situation—to simplify dealers' selling, stocking and investment problems—to enable dealers to make more profits.

And the same proved methods have been applied—fewer models, meaning lower production costs—vastly increased production and sensationally lower prices that smash the greatest obstacle encountered in range selling.

For 1941 Kelvinator telescopes a complete line into three models. That means a smaller investment for you, a simplified display problem, an easy line for salesmen to master and sell, and an easier choice for buyers.

PRICES ARE FROM $20 TO $30 LOWER THAN THOSE OF COMPARABLE MODELS LAST YEAR. Starting with a low-price basic model at less than $100, the line leads buyers easily through only one intermediate step to the deluxe model.

But one of our Biggest features is Kelvinator's answer to the problem "How to Sell the Prospect." We're filling this need with a practical "down-to-brass-tacks" program!

Focal point of the entire program is the brand new Kelvinator "Salesmaster"—a most beautiful, practical and THOROUGH selling tool—a complete presentation of all you need to se electric cooking and Kelvinator Electric Range *Plus* other time-proven selling aids—nationa advertising, local advertising, sales traini store demonstrations, traffic building prom tions. And THE MOST ATTRACTIVE STOCKING DE YOU'VE EVER BEEN OFFERED.

Get in touch with your nearest distributor factory branch—or wire or write to *Ran Division*, NASH-KELVINATOR CORPORATION DETROIT, MICHIGAN.

Get More—Get KELVINATOR

REVIEW OF 1941 APPLIANCE MODELS

Westinghouse

A NEW advance in transforming the art of American cookery into an automatic process was reported at the preview of the 1941 Westinghouse range line. This new development is the Single Set Switch, used for cooking on the surface of the range.

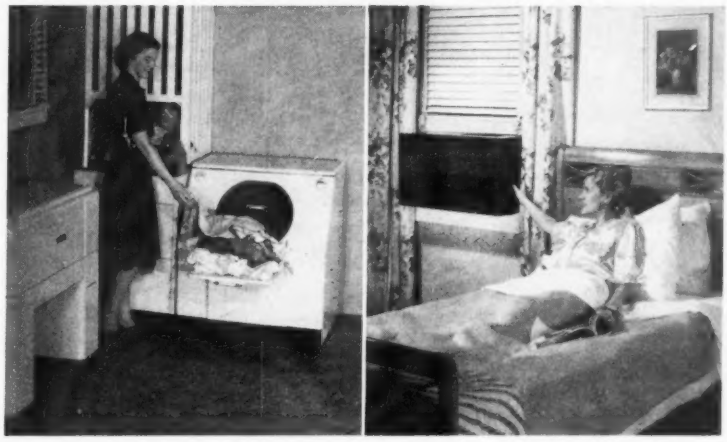
This innovation in surface cooking enables the housewife to place her food on the range, set a single dial, and devote the time she used to spend "watching the pot" to leisure or to other household tasks. With one setting of the switch, the food cooks at high temperature for any desired period of time up to 30 minutes, then the unit automatically turns down to a selection of any one of four lower heats. For example, vegetables can be cooked at high heat for five minutes, then automatically reduced to simmer heat for as long as desired.

Another feature of the switch is to turn off the current completely. This is of particular value in preparing single dish meals such as vegetable and meat dinners, and for stewing dried fruits. The housewife has only to set the time dial for 30 minutes. The unit then cooks for that period on medium high heat, then automatically turns off.

The 1941 Westinghouse range line numbers seven models. The trend toward simplification is emphasized by the fact that this is four fewer than were offered in 1940.

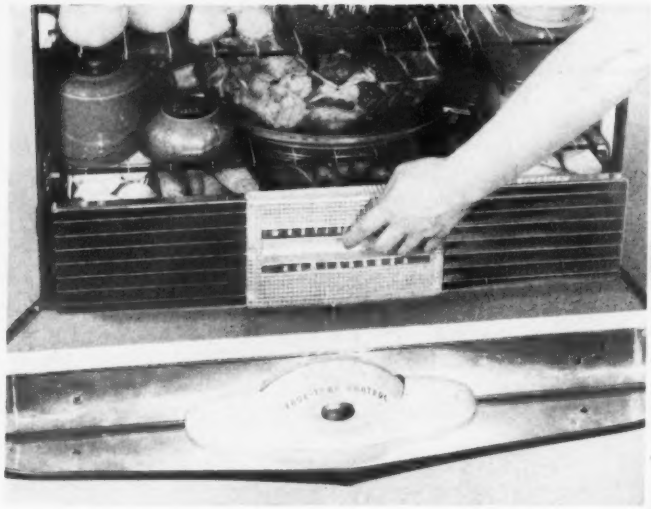
The Westinghouse range line for 1941 is led off by the Emperor, described as a triumph of streamlined design. This model, which has two large ovens, is equipped with an automatic electric outlet on the back panel. This permits a coffee maker, toaster or other device to be plugged in and operated on the range surface during preparation of a meal. It also has detachable Economy Cooker.

Feature of the Regent model is a giant-size oven, capable of baking 86 pounds of potatoes, almost a bushel and a half, at one time. This range also has an auxiliary oven and a built in deep-well cooker. The Commander, with one oven and the deep-well cooker, is equipped with a built-in combination electric timer and Minute Minder which rings a bell at a preset time to remind the housewife to remove cooking foods. The Cham-



At left, the Laundromat, Westinghouse's new automatic cycle washer. The door opens downward and becomes a convenient shelf for sorting soiled clothes. The new Westinghouse "Mobilaire" is a two-way air conditioner. By simply a twist of dial, it will cool a room in summer or heat it in spring or fall. In mild climates, it can be used for cooling or heating all year round.

At left, the 1941 Westinghouse Commander, a medium-priced range with many deluxe features and an extra large Tru-Temp oven. The Emperor, above, is the top model of the 1941 line. It features a new type of automatic control switch and has two large ovens.



Introduction of color in the interior styling marks the 1941 Westinghouse refrigerator line. Shown above, the Humidrawer and the illuminated True-Temp control. At right, the top model of the line, the Martha Washington. Note the use of crystal plastic.

pion range has a large oven with interior light, three storage drawers and complete streamlined styling.

In the Captain model a glass oven door enables the housewife to watch baking and roasting operations without opening the oven. Streamlined styling and white switches on the back panel are introduced to the low priced field in the Commodore range, which also has a large oven and approximately six cubic feet of storage space. A small apartment house model of conventional design completes the line. All have the standard five-speed Corox surface units.

To honor a trio of notable early American women, the 1941 Westinghouse refrigerator line has been styled in a colonial mode. The most beautiful and expensive model is named for Martha Washington and bears a silhouette portrait of her. Similar portraits of Dolly Madison and Betsy Ross adorn other models.

Color Invades Interior

Color, introduced in plastic panels of soft pastel shades, will invade the interior of the 1941 refrigerator for the first time. Colored dishware in harmonizing tones will complete the effect. The Martha Washington will have a decor of crystal against the white of the interior, the Dolly Madison of tan and brown, and the Betsy Ross of colonial blue. The color theme is continued in the American Standard and American Special models, which have a green and white color motif.

Through True-Temp Control, the 1941 Westinghouse refrigerator enables the housewife to "dial the number" of the temperature she wishes for the main food compartment. This temperature is maintained regardless of kitchen temperature. At the same time, correct temperature and humidity levels hold for the four other Zones of Cold. These five Zones of Cold fill the need for the five distinct kinds of refrigeration needed in preparation of any meal.

This assures even quieter operation than in previous years. A more efficient temperature control has been devised for the froster, or ice-cube compartment.

The Trip-Lok, a new feature of major models, does away with one old kitchen annoyance. A refrigerator door may sometimes seem to be closed when it is slightly ajar. The Trip-Lok automatically shuts the door. On a few models, the Aero Spring Hinge has been introduced. This permits the refrigerator door to open to any desired distance, and then remain in that position until the hinge is tripped. Tripping the hinge closes the door automatically from any open position.

The 1941 Westinghouse refrigerator will be offered in five interior sizes—three, four, six, seven, and nine cubic feet. Increased popularity of the six foot and larger models are attributed to the fact that the average American family has discovered the advantages of plentiful food storage space. So decided has this trend become that the five foot model of former years has been eliminated from the Westinghouse line and seven-foot and nine-foot models added.

The line has been so designed that there is a wide range, not only in color and styling, but in model sizes and accessories to fit the individual requirements of all housewives. Two High Humidity models contain the Westinghouse "Humichest." In these models, available in six and nine foot sizes, humidity conditions make possible uncovered storage of leftovers and foods of high water content. Three models are available with porcelain exterior.

A new development in family washing methods, which is expected to revolutionize home laundering habits of the American housewife was announced at the preview. It is the Laundromat, which automatically carries out the complete cycle of laundering operations, yet remains free from vibration. The Laundromat first mixes water to the correct temperature. Then it washes the garments and rinses them in three different "baths." The Laundromat is automatically drained after each process. No dirt or grime can accumulate. Finally the Laundromat dries the clothes by spinning them in a porcelain basket 1500 times in three minutes, then shuts itself off.

More leisure time for the housewife is one of the great gains foreseen. The housewife has only to load the Laundromat with garments, add soap and water softener, and set two dials. From this moment on, all operations are automatically performed. For the complete cycle of laundering, the Laundromat uses only one-eighth of a kilowatt hour of electric current, which, at a three-cent rate, costs less than half a cent. An electric cord attached to the machine may be plugged into any ordinary outlet, permitting the Laundromat to be installed in the kitchen, workroom or basement of any home without being anchored to the floor.

Year-Round Air Conditioner

How cool air in summer or warm air in winter can be provided at the turn of a dial was demonstrated at a preview of the new Westinghouse plug-in air-conditioner. The new unit is slightly larger than a table model radio and can be installed in any ordinary window. Its price is about the same as that of an ordinary room cooler of the same capacity.

Making use of a principle which

literally puts a summer air conditioning system in reverse, this air-conditioner, known as the Mobilaire, heats the room by extracting heat units from outside air and delivering them indoors. Heat can be shut off and cool breezes for summer comfort turned on by means of a dial on the side of the cabinet. The new air-conditioner supplies several times as many heat units for every unit of power as the ordinary electric heater, and its operating cost is correspondingly low.

General Electric

WITH such star performers as the long-awaited automatic electric washer and completely new lines of refrigerators and ranges leading the parade, sales and promotion executives of the General Electric Company's appliance and merchandise department launched a series of nine previews of major appliance lines for 1941.

The holding of a series of previews throughout the country, instead of a single large meeting in Bridgeport, as heretofore, was planned in order that more of the sales counsellors and working personnel of each distributing organization might attend. The distributor previews, in each case, are followed shortly by dealer meetings conducted by the distributor, following the same program and employing similar technique and properties.

Completely new lines of products were introduced by the refrigeration, range and water heater, electric sink and cabinet, home laundry equipment, radio, and vacuum cleaner sections, together with complementary sales, merchandising, advertising, and promotional programs. Meetings were closed to all but interested organizations.

Fully Automatic Washer

Equalling if not surpassing the interest shown in such perennially important lines as refrigeration and ranges, was the reception accorded the initial showing of the new General Electric automatic washing machine. No details as to the device itself or the merchandising plan are to be released to dealers or public until late spring or summer, according to present plans.

The new refrigerator models feature a new deluxe 7-cubic-foot model, the pivot for telling the "Ten-Star" demonstration story. The "ten stars" in question cover ice storage, frozen food storage for as much as 20 packages, quick chilling for beverages, high humidity meat storage, multi-bottle storage for as much as eleven quarts of milk, butter conditioning, vegetable storage under glass, ten quarts of fruit storage, adjustable and sliding stainless steel shelves, and non-refrigerated dry storage.

Principal attention in 1941 is again on the popular six, seven, and eight-foot sizes, with the new "seven" bracket offering not only increased refrigerating capacity and all deluxe features but a more logical step-up in the price structure, which begins with a six-foot price leader and extends through standard, "Royal," and "Imperial" models. On either side of the popular sizes in the new line are smaller models for the apartment house field and "twelves" and "sixteens" for the larger homes. Particular effort has gone into demonstrable features that make step-up selling logical to the prospect.

All 1941 ranges offer new features and in every case prices have been considerably lowered. Top model, except for the extra-large "Imperial," is an entirely new deluxe range which will carry the name "Stratoliner" through a cooperative arrangement with Transcontinental and Western Air lines. Of the six standard-size ranges shown, two are priced below a hundred dollars for the first time in G-E history.

Improved Calrod surface and oven units, the extension of sealed-in Calrod units to the thrift cooker, built-in timers, and redesigned larger broiler units are among the new features.

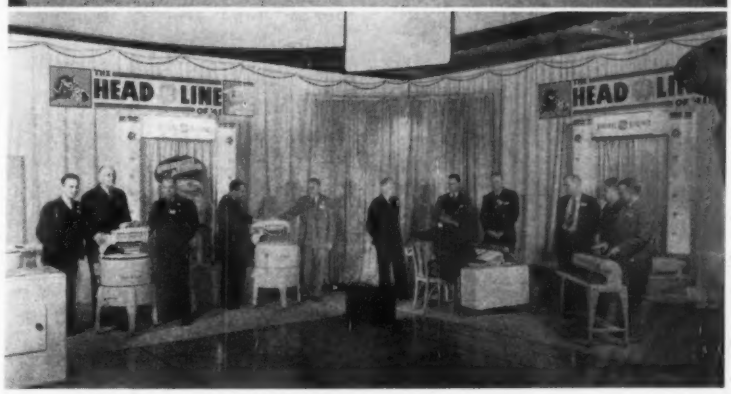
On the promotional side, trade, newspaper, and general magazine advertising programs have been enlarged, and the latter in particular will be closely coordinated with other elements in the program to establish retailers as headquarters of a national organization.

Headline feature in the new water heater line is the sickle-type Calrod unit, developed after many years of laboratory work and field test. The new unit offers the advantage of direct immersion in the water to be heated, and its shape makes for faster heating. Among new promotional pieces shown were miniature water heaters, with glass tanks which reveal the "inside" action story. Regular cooperative newspaper advertising will be continued and broadened by key city advertising.

New Disposall Announced

The new G-E Disposall, introduced at the showings, will henceforth be available with a 3½-inch adapter flange, as well as with the standard 5-inch flange. Heretofore disposall sales for existing kitchens have been considerably limited because the standard opening in most sinks has been too small to allow installation of the device without resorting to the use of a boring tool. To the opportunity of selling disposalls and electric sinks to new construction, is now added the further opportunity to move into the modernization market with a practical solution.

As a companion activity to the refrigerator and range storage center units, there was introduced a new sink storage center, a new cabinet type sink constructed to the dimensions of the G-E electric sink which

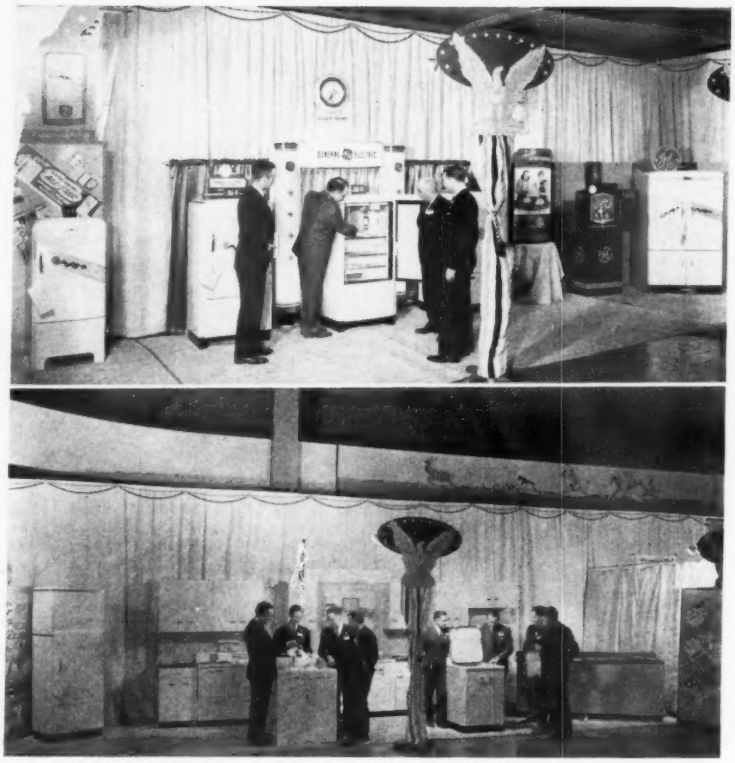


Nine previews of 1941 appliances were conducted throughout the country last month for General Electric distributors. Shown here and on the following page are typical displays presented at the Atlanta showing. Completely new lines of refrigerators and ranges and a new fully automatic washing machine were some of the highlights of the display.

can later be furnished with dishwasher and disposall, and such other new items as a vegetable cabinet, vertical tray storage cabinet, and a new refrigerator accessory cabinet designed to fit the top of a refrigerator. Also announced was a line of custom-built linoleum-equipped sink and counter tops.

In conjunction with, and in spite of, the announcement of the coming automatic electric washing machine, G-E's first completely new line of standard washers, ironers, and dryers to be launched simultaneously for several seasons was introduced. Four new wringer models, two spinner washers, two dryers, and four ironers constitute the complete offering. The wringer-type washers are particularly noteworthy for a new and exclusive wringer construction, streamlined and massive, which dominates the styling and represents, on the engineering side, several years of redesigning.

To accelerate sales of the tumbler-type dryer, introduced a year ago, G-E is introducing another model which will operate as a plug-in device on ordinary household current. Public interest in this type of dryer is high, but sales have been limited to a certain extent by the need for special wiring, now eliminated.



Typical displays presented at General Electric distributor showings.

Kelvinator

CLIMAXING the greatest sales year in the company's twenty-seven-year history, the Kelvinator Division of Nash-Kelvinator Corporation last month unfurled its new line of 1941 household electric refrigerators to more than 500 distributors, factory branch men, public utility executives and wholesalemen who gathered in Detroit for the 1941 Kelvinator sales convention.

Featuring such precedent-shattering innovations as the new-type "Moist-Master" models with sparkling glass-shelved interiors, the new stainless-steel "Cold Ban" and the new all-steel cabinet, the 1941 line, according to Kelvinator's General Sales Manager Frank R. Pierce, is backed by a selling program that is expected to further increase the industry-rocking gains made by Kelvinator dealers with the company's revolutionary 1940 manufacturing and selling plan.

Pierce said that the 1940 program had been an answer to the long un-

Kelvinator's "step-up" line of big sixes for 1941. Each has a food storage capacity of 6¾ cubic feet. The six sixes, from right to left, are: the leader model SS-6; the equipped D-6; the completely equipped S-6; the de luxe-equipped R-6; the porcelain exterior PS-6; and the "Moist-Master" M-6. Right, the new "Cold Mist Freshener" compartment in Kelvinator's sparkling glass-shelved "Moist-Master" models provides ideal humidity conditions for storage of such perishable foods as leafy vegetables, desserts, left-overs and salads.

Kelvinator's new slogan is tacked up by Charles T. Lawson, manager of household appliance division, as Frank R. Pierce, general sales manager, and George W. Mason, president, look on. At right Mr. Pierce points to the new 5-way Magic Shelf, a new note in interior flexibility.

heeded cry from dealers for solutions to such problems as too many models, unfavorable pricing policies, inadequate "step-up" plans, too many dealers and unconvincing "trade-in" stories.

Pierce emphasized, however, that the 1940 program had been only the first step in a long-range sales plan, and that in 1941 Kelvinator would lustily pursue its policy of putting the dealer's needs above everything else in an effort to further reduce his problems and further improve his position. He stated that too much stress could not be placed on the fact that the entire 1941 program is a dealer plan, developed with the retailer as the prime consideration and built so that the dealer can make more profits from selling Kelvinator electric refrigerators.

Accomplishments for 1941

"Briefly," he explained, "here is what we've done in 1941:

"1 . . . We've further reduced and simplified our line by concentrating it in eight models.

"2 . . . We've produced a new low-price program that is more effective because every model in the line is an obviously greater value.

"3 . . . We've designed a more attractive 'step-up' plan based on a price scale in which the exact value of the features in every model determines its cost.

"4 . . . As indicated in our slogan —'A Market for Every Dealer . . . A Dealer for Every Market'—we are projecting this year a more comprehensive plan of selective markets for Kelvinator dealers.

"5 . . . This year we've provided a more convincing answer to the replacement market problem in the sparkling new 'Moist-Master' models with the 'Cold Mist Freshener.'

"6 . . . We have added a gleaming stainless steel band around the cabinet throat, which eliminates 80 unsightly screwheads which formerly held a dark composition trim in place."

In announcing the new refrigerators, Pierce said that the 1941 line is made up of eight models, each containing a multitude of "extras" that give Kelvinator the biggest value story in the company's history. He explained that the eight refrigerators include six 6¾ cubic-foot models and two 8¾ cubic-foot models, which Kelvinator has found are the size refrigerators people really need.

Big feature in the 1941 Kelvinator line is the new type "Moist-Master" system, which, according to Pierce, has been incorporated in a 6¾ and an 8¾ cubic-foot model—the M-6 and the M-8. He said that these two cabinets, designed with sparkling, eye-catching glass shelves, an all-glass "Cold-mist Freshener" compartment and refrigerating coils in the walls, are felt by Kelvinator to be the most beautiful refrigerators ever manufactured. They are built with the replacement market in mind, he explained, and are expected to provide dealers with a refrigerator that will cause owners of late-year models to readily trade in their old cabinets for this most modern means of food preservation.

The outstanding achievement in the 1941 Kelvinator sales program, according to Pierce is the "step-up" story. Briefly, he said, it is based on a price scale in which the exact value of the features in every model determines its cost, and it completely eliminates the necessity for justifying a substantially higher price on the basis of obviously inexpensive gadgets.

"Kelvinator's 'step-up' story for 1941," Pierce said, "starts with the low-priced SS-6 selling at $114.75. We expect this big refrigerator, which has a full 6¾ cubic-foot capacity, to prove a sensation in bringing prospects into the dealer's place of business.

"Included in the many features incorporated in the SS-6 is the new all-steel cabinet with sides and top from floor to floor formed out of one single sheet of strong steel. Leaving not even a toothpick of wood in the cabinet, this new construction adds strength and sturdiness without seams and is used in every model in the 1941 Kelvinator line. The cabinet is rustproofed inside and out and finished in improved Permalux, the long-wearing baked enamel that will not crack, chip or change color and that resists acids and greases.

Low-Priced Equipped Model

"A new low price for an equipped refrigerator appears with the announcement of the D-6 at $124.95. It is the second step in the 'step-up buying' plan, and sells for just ten dollars and twenty cents more than the first 6¾ cubic-foot model in the new line. It is an equipped model with all the basic features found in the SS-6, plus such additional features as a large, sliding porcelain Kelvin Crisper with a porcelain top, a large sliding moonstone Cold Chest and 'Pop-Out' ice trays.

"Next in the line of Kelvinator sizes is the S-6, the model that takes the place of the 1940 S-6, which many dealers believe to be the largest-selling single refrigerator in the industry last year. This model is priced at $139.95, only $15 more than the D-6. Besides the many fine features found on the two lower-priced models, the S-6 also has a vegetable bin for unrefrigerated dry storage of as much as 1¼ bushels of food; a sliding, glass-covered moonstone Meat Chest; a glass-covered sliding crisper that actually has 30 per cent more space in it than in 1940 models. New to the S-6 and

The new 1941 Kelvinator models have a new all-porcelain coil door, which is sturdy, easy to clean, and more attractive. The Meat Chest is a large sliding moonstone glass container with a safety stop to prevent it from sliding too far. The Kelvin Control, with thirteen different settings, is conveniently located above the center of the door opening. The deluxe-featured R-6 has twin Kelvin Crispers, each with 30 per cent more space than those used in 1940; 50 per cent more ice capacity; a double-width dessert tray and deluxe interior styling.

the Kelvinator line this year is the five-way 'Magic-Shelf,' which make possible five different interior shelf arrangements.

"The next 'step-up' is to the de luxe-featured R-6, another 6¾ cubic-foot model, which sells for only $15 more than the S-6. This cabinet has all the five basic Kelvinator features and, in addition, such de luxe equipment as two sliding glass-covered crispers instead of one, 50 per cent more ice capacity and a double width dessert tray. In addition, it has more beautiful interior styling and more attractive crisper handle and Meat Chest handles.

"The S-8, a completely equipped 8¾ cubic-foot model, is priced at $179.95 and offers the buyer plenty of food storage space at a low cost. Besides the basic Kelvinator features, it has a vegetable bin of 1.4 bushel capacity; the all-steel 'Cold Ban' that eliminates over 80 unsightly screwheads; the sliding, glass-topped porcelain Crisper; the sliding moonstone Meat Chest with separately-mounted sliding glass cover; a double-width dessert tray, and 'Pop-Out' type ice trays.

"There are two 'Moist-Master' models in the 1941 line. One is a 6¾ cubic-foot model which retails for $179.95, and the other, an 8¾ cubic-foot cabinet selling for $209.95. The 6¾ cubic-foot model has 12.6 square feet of shelf area, and an ice cube capacity of 99 cubes. The 'Eight' offers 16.8 square feet of shelf area, and makes 107 ice cubes at a time."

Gibson's model ER-391-R. Lamp shown is standard equipment. This model features steel girder construction and all porcelain cabinet.

Gibson

SALES of Gibson electric refrigerators were up 41.7% in units and 43.3% in dollars in 1940, F. E. Basler, general sales manager, revealed at Gibson's regional conventions for distributors. Gibson's 1941 increase of 43.3% in dollars taken in by dealers was contrasted by Basler with the entire industry's increase of only 7.7% in dollar sales as reported in **Retailing Weekly** of October 7.

Basler emphasized the fact that retailers are primarily interested in increased dollar profits and that's where Gibson's increase outstripped the industry's as a whole of 80% in 1940. Basler also pointed out that 1940 was the fourth consecutive year Gibson's increase had exceeded the increase of the industry.

The increased sales of Gibson Freez'r Shelf models accounted for the big increase in dollar sales, according to Basler. This increase was due to the fact that Gibson dealers offer both the conventional dropped-down freezing unit models at low prices and the exclusive Gibson Freez'r Shelf models which enable dealers to sell up to the Freez'r Shelf models with their bigger profit margins, Basler stated. He said, "If the Freez'r Shelf was an ordinary gadget, that would be one thing. But the Gibson Freez'r Shelf refrigerator is an entirely different type of refrigerator, with a flat freezing shelf instead of a dropped-down, box-type freezing unit. That's why Gibson salesmen were able to step up their customers to Freez'r Shelf models and establish this new Gibson record of more dollar sales than the industry as a whole."

C. J. Gibson, president, and L. W. Hamper, vice president, of the Gibson company, told the meeting of the substantial plant improvements Gibson has made to handle the big production increase and described some of the new machine and tool equipment that has been added to make the Gibson factory the last word in refrigerator manufacturing efficiency. C. J. Gibson pointed out that the outstanding sales success of the last four years had put the company in an especially strong financial condition.

F. E. Basler presented the new 1941 Gibson refrigerator line of 7 models—2 models with standard dropped-down freezing units and 5 models with the exclusive Gibson Freez'r Shelf.

The two standard models are the No. C-631 with a suggested list price at the factory of $89.95 and the No. CU-631 with a suggested factory list of $109.95. Both models are well over 6 cubic feet. The CU-631 has a porcelain door on the freezing unit, a large meat container and an interior light.

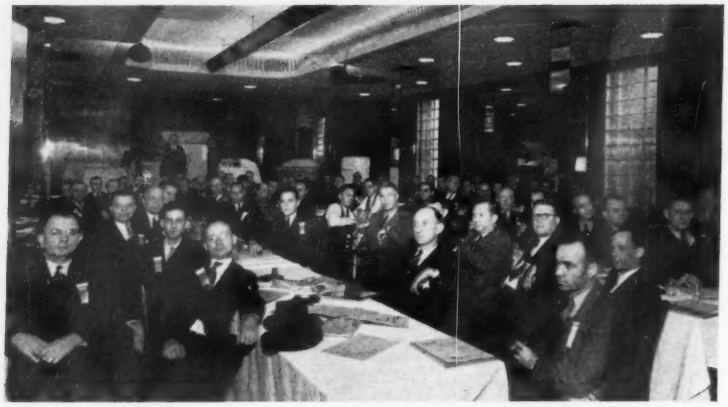
–AND SILVERY SPANGLED GALVANIZING DOES NOT ALWAYS CONVEY

THE "INSIDE STORY" OF WHAT LIES BENEATH. IF YOU ARE LOOKING AT HUBBARD HARDWARE YOU MAY BE SURE THAT THE HEAVY, EXTERIOR COATING OF ZINC COVERS ONLY THE BEST GRADE OF NEW OPEN HEARTH STEEL, HELD TO RIGID SPECIFICATIONS, CAREFULLY INSPECTED, TESTED AND FABRICATED.

HUBBARD AND COMPANY

PITTSBURGH . . . OAKLAND CALIFORNIA . . . CHICAGO

"HANG THE LOAD ON HUBBARD HARDWARE"



Distributors and distributor salesmen from southern states acclaimed Gibson's Freez'r Shelf refrigerators and electric ranges at the two-day regional showing held in New Orleans in December. Merchandising, advertising and sales promotion plans were discussed on the first day. Second day was devoted to conferences directed by Brower Murphy, southeastern division manager, Atlanta, and J. R. Tepfer, southwest division manager, Dallas.

The Freez'r Shelf models start with Model No. F-671 at a suggested factory list of $129.95, a new low for a Freez'r Shelf model. Other Freez'r Shelf models are No. F-6721 at $139.95; DeLuxe Freez'r Shelf model No. F-681 at $159.95; and Super Freez'r Shelf models, No. SF-691 at $199.95 and No. SF-791 at $219.95.

All Freez'r Shelf models have the exclusive Gibson Triple Chiller, a chill drawer (holding a temperature just above freezing) for meats, beverages and salads. In the three top models, the chill drawer glides in and out on two-position adjustable shelf supports. Freez'r Shelf models also have two quick-ejecting "Jack Robinson" ice cube trays. All Freez'r Shelf models, except the low price No. F-671, have twin vegetable fresheners and bushel-size tilt bins. No. F-671 has one vegetable freshener.

Gibson is continuing its successful apartment house Freez'r Shelf models, the 3 cubic foot No. A-331 with a suggested price of $109.95; and the 4 cubic foot No. A-471 at $129.95.

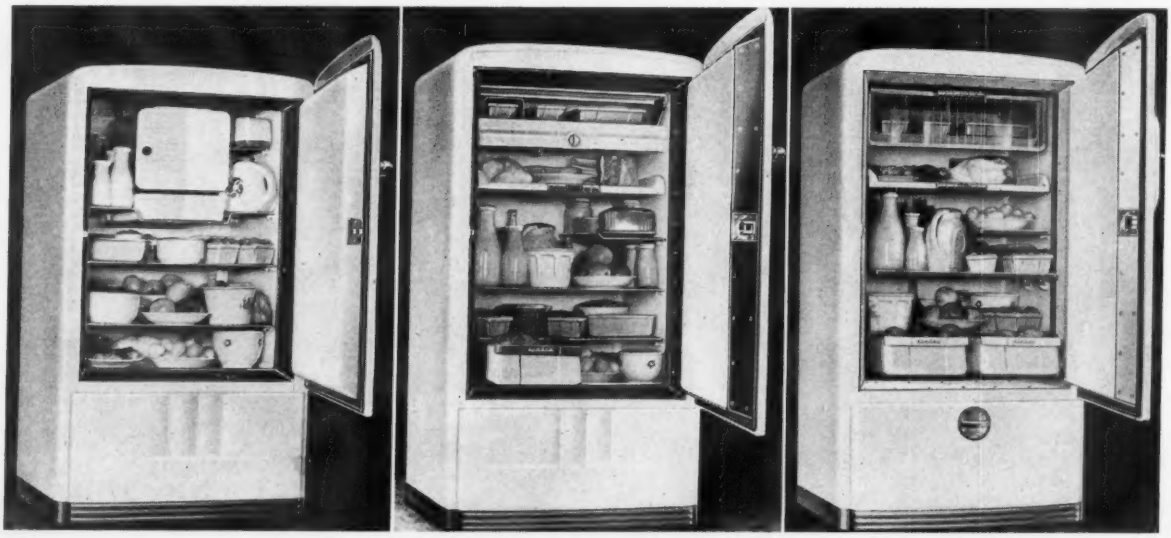
Walter D. Krauter, Gibson service manager, used cards and sketches to explain how Gibson has made further improvements in its cabinet and mechanism, and has refined its many refrigerator conveniences to make them more easily usable. Krauter described how Gibson's permanent compressor mounting does away with the danger of broken lead-in wires that may result in service calls and costly repairs.

J. L. Stephens, sales promotion manager, outlined Gibson's new 1941 Four-Way sales promotion program. Stephens explained how the 1941 program, based on the proven program so successful for the last 4 years at Gibson, is directed at the mass market and the selected prospect. He also described Gibson's new sales education aids and presented the new demonstration and display pieces which include a beautiful but inexpensive background display that can be adjusted for use with either ranges or refrigerators.

Gibson's advertising will be concentrated in big circulation newspapers again in 1941 and every ad will give the price of the Gibson offered for sale and the dealer's name and address. Stephens stressed the fact that this program of advertising which was developed from a retailer's viewpoint makes every ad a direct sales-maker. Gibson distributors will be given a greater voice in the advertising program in 1941, according to Stephens.

At the afternoon session, F. E. Basler reviewed the record of increased Gibson range sales in 1940. Earl Nobles, Gibson's special range representative for the eastern half of the United States, presented the 1941 line of four Gibson ranges. Nobles demonstrated how the line had been redesigned to give dealers a traffic-creating low price special at a suggested retail of $99.95 with a "reason why" step-up to the other three models with suggested retails of $129.95, $169.95 and $229.95. Nobles pointed out that both top models have built in eye-angle automatic timers that operate with oven, Kookall or convenience outlet. He also revealed that the $229.95 model has temperature control on the new Kookall Kettle.

Gregory V. Drumm, of the sales promotion department, described how the new 1941 range promotion will cover specially-selected electric range markets with new tabloid broadsides designed to create heavy store traffic.



Three leaders in Gibson's refrigerator line for 1941. Left is model CU-631, a model with the conventional dropped down freezing unit. At center, model F-671, one of the Freez'r Shelf models. At right, model SF-691, which features the new Sliding Chill-Drawer. This model offers frozen storage, normal storage, and moist cold storage.

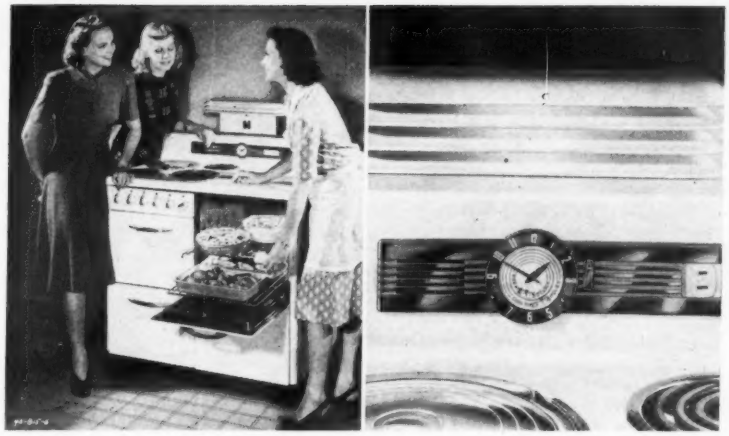
Hotpoint

A GROUP of key executives from Hotpoint Chicago headquarters, headed by R. W. Turnbull, vice president, were star performers at a series of six meetings with Hotpoint Distributor Sales executives, where Hotpoint's 1941 products and plans were presented for the first time.

The slogan back of Hotpoint's 1941 plans is "Your Place in the Sun in '41 with Hotpoint." Each of the dramatized presentations by the various Hotpoint division managers was keyed to this theme.

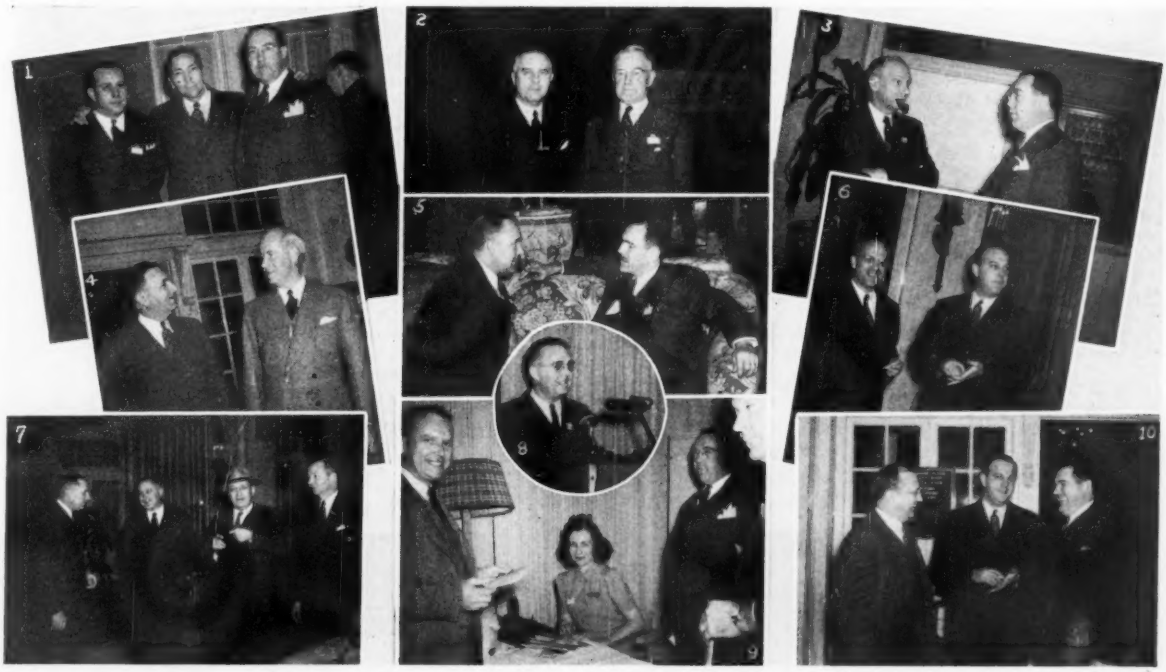
A unique presentation method was introduced by Hotpoint this year through the use of sound-slide pictures in full color, supplemented by stage presentations of the new Hotpoint products.

Climaxing the day's program at each meeting was the new Hotpoint sound motion picture "And the Pursuit of Happiness." This is an entertaining institutional film which will be used throughout the year by Hotpoint retailers, along with the popular Hotpoint feature picture, 'Blame It On Love."



This is Hotpoint's 1941 Hostess Model. Among the new features introduced for 1941 are the All-Purpose Flavor Seal oven; new larger Calrod heated Thrift Cooker; and built-in Timemeasure and Timemaster, the latter being illustrated at the right above.

Accompanying Mr. Turnbull on this series of meetings were: G. H. Smith, merchandising manager; W. A. Grove, advertising and sales promotion manager; Clinton Brown, campaign manager; W. R. Schafer, range division manager; A. H. Jaeger, water heater division manager; F. B. Williams, refrigeration division



A group of Hotpoint key officials, headed by R. W. Turnbull, vice president, were star performers at a series of six meetings with Hotpoint distributor executives. Photos above show some of those in attendance at the Atlanta meeting. (1) F. B. Williams, Hotpoint refrigeration division manager, Chicago; Roy LeCraw, Mayor-elect of Atlanta; and J. T. Nee, Hotpoint range specialist, Atlanta. (2) Mr. Turnbull and E. H. Ginn, commercial vice president, General Electric Co., Atlanta. (3) H. W. Cameron, of H. W. Cameron, Inc., Chattanooga, and Mr. Nee. (4) R. A. Clark, southeastern district manager, General Electric Supply Corp., Atlanta, and J. L. Busey, president, General Electric Supply Corp., Bridgeport. (5) William Plunkett, General Electric Contract Corp., Atlanta, and K. W. Henderson, secretary, H. W. Cameron, Inc., Chattanooga. (6) R. J. Brown, vice president, General Electric Supply Corp., Bridgeport, and H. B. Zimmerman, General Electric Supply Corp., Jacksonville. (7) C. M. McFee, Graybar Electric Co., Atlanta, J. H. Littleton, Jr., manager, Graybar Electric Co., Columbia, S. C., H. D. Peacock, sales manager, General Electric Supply Corp., Atlanta, and D. H. Risher, Hotpoint refrigeration specialist, Atlanta. (8) H. K. Dewees, Hotpoint's southeastern district manager. (9) B. A. Propert, manager, General Electric Supply Corp., Richmond, and Mrs. Clarice McConnell, of Hotpoint's Atlanta office. (10) Mr. Peacock and Mr. Zimmerman, again, with H. W. Nagel, Hotpoint water heater specialist, Atlanta.

manager; H. E. Warren, home laundry division manager; Charles Griffith, kitchen sales division manager; and Miss Mildred Hickman, home economics director. J. C. Saur, General Electric Contracts Corporation, and L. J. Sholty, of Maxon, Inc., Hotpoint advertising agency, also accompanied the group.

Eight beautiful new ranges comprise the 1941 Hotpoint line and constitute the greatest values at the lowest prices in thirty-one years of Hotpoint range development. In the face of rising material costs, Hotpoint engineers have combined further advances in electric range design, with refinements and improvements in manufacturing methods, to help reduce production costs.

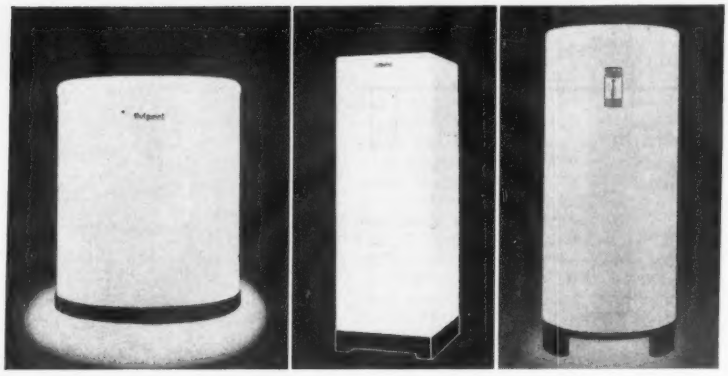
Foremost among the new features introduced by Hotpoint for 1941 are: a newly designed, simplified All-Purpose Flavor-Seal oven, featuring the famous Calrod baking unit, combined with a new, larger, radiant broiler unit; a new, larger Calrod-heated Thrift Cooker with Flavor-Seal lid; individually illuminated switch dials; built-in Timemaster; built-in Timemeasure, and new modern styling of surpassing beauty.

Every 1941 Hotpoint range, except the smallest apartment house model, is finished in white, easily-cleaned porcelain enamel. All use Hotpoint's famous Battleship Construction, with the one-piece Monotop cooking top. Every 1941 Hotpoint range is equipped with Giant and Utility size Hi-Speed five-heat Calrod Surface Units, with one-piece aluminum reflector pans, and every one has the new, simplified All-Purpose Flavor-Seal oven.

Hotpoint's new, 1941 Timemaster, which is built-in on some models, makes automatic oven cooking even simpler than in the past. Simple legends printed on the face of the clock eliminate guess-work and mathematics from automatic timer-clock use.

The famous Hotpoint Timemeasure, also built-in on some models, sounds a melodious chime note to time short cooking operations, from five minutes to one hour in length.

New features of design, construction, and convenience are presented by Hotpoint for 1941 in a line of fifteen refrigerator models, ranging from 3 cu. ft. to 16 cu. ft. capacity, to meet the needs of all families, in all income classifications.



Hotpoint water heaters for 1941 range from the 1-gallon size to the large 140-gallon unit for commercial use. Shown here, left to right, a new 5-gallon model in the Master line; the square Hotpoint Vogue model; and the typical round Master model.

Two additional storage zones, one for butter and one for unrefrigerated storage; new interior design providing greater storage capacity; brilliant white Textolite door strips; and three models of a new 7 cu. ft. capacity, are some of Hotpoint's new refrigerator advantages introduced for the first time in 1941.

Construction and exterior finishes of all Hotpoint 1941 refrigerators carry out the massive dignity, combined with graceful streamlining that have given Hotpoint home appliances their high beauty rating. Many of the new models have a beautiful, new nameplate in "Hotpoint blue" crystallite, flanked by handsome Chrome trim. All models, except the Imperial series, are finished with long-lasting, shining white Calgloss. Hotpoint's Imperial series are finished in luxurious, easily-cleaned white porcelain enamel. The stainless steel base grille on DeLuxe and Imperial models is designed to give symmetry to the refrigerator's appearance.

Interiors Redesigned

The year's important refrigerator news is found inside the cabinets of 1941 Hotpoint refrigerators. Cabinet interiors throughout the line, excepting the 3 and 4 cu. ft. sizes, have been completely redesigned, sharply increasing the amount of usable storage space, and enhancing interior appearance. For example, Hotpoint's new interior design permits storage of eleven quart-bottles, or one gallon-bottle and eight quarts, in the Cold Beverage Zone of the 7 cu. ft. models, and twelve quarts, or a gallon and ten quarts in 8 cu. ft. models. A new, 1941, Hotpoint construction feature, offered this year in all DeLuxe and Imperial models, as well as the 7 cu. ft. Standard, is the use of snowy-white Textolite door strips. Textolite has been hailed by Hotpoint users for years for its efficiency in preventing heat leakage. White Textolite makes this practical feature a beauty asset as well. All Hotpoint cabinet interiors are finished in porcelain enamel, with acid-resisting reservoir bottoms.

A new Hotpoint convenience feature, which promises to be hailed by homemakers everywhere, is the exclusive Butter Conditioner, where butter may be kept fresh, and at ideal consistency for spreading, by adjustment of a small knob.

Hotpoint Electric Water Heaters for 1941 include sizes for every household need, and for commercial

Interior and exterior views of the 8 cu. ft. deluxe model.

WATCH THE FAVORITE—
WATCH *Frigidaire!*

Watch for announcement of the most spectacular line of refrigerators and electric ranges ever offered to the buying public. Now being introduced to Frigidaire Dealers in factory-conducted meetings from coast to coast. Brilliant new models, new advertising and new selling plans—all strategically designed to increase further the predominant sales leadership of Frigidaire Dealers in '41!

REFRIGERATORS

1. Brilliant New Beauty! A world-famous designer creates for Frigidaire completely new [redacted] refrigerator as a beauty note in your kitchen.

2. More Useful Than Ever! New [redacted] compartments—bigger and roomier! New [redacted] up to [redacted] bigger! [redacted] adjustable to suit your needs. Even the [redacted] model selling for only [redacted] is fully-fitted, including [redacted] and [redacted]!

3. Use Less Current! The [redacted] 1941 Frigidaires have [redacted] power to keep food better and freeze ice faster! Yet they cost less to operate than [redacted].

4. Sensational New Values! Choose from [redacted] brilliant models—every one a [redacted] priced [redacted]. [redacted] Cold-Wall prices are [redacted] as $[redacted]. . . [redacted] Standard models [redacted]! The [redacted] a genuine Frigidaire "Six," SELLS FOR ONLY . . . $[redacted].

ELECTRIC RANGES

1. Brilliant New Beauty! New concepts of range beauty, created by a world-famous designer include [redacted].

2. More Useful—Faster! Exclusive advantages assure [redacted] more care-free cooking. New [redacted] are [redacted] known!

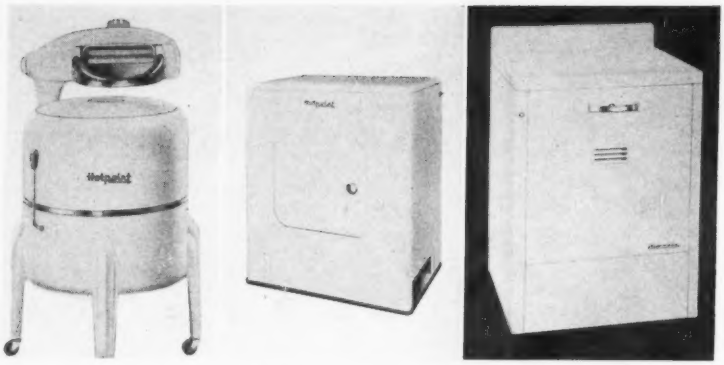
3. Use Less Current! Lowest cooking cost in Frigidaire history. New [redacted] units [redacted] more efficient. Exclusive [redacted] save up to [redacted] on current.

4. Sensational New Values! [redacted] brilliant models. Everyone an outstanding [redacted]! Prices start at only [redacted].

THE SAME *Leadership in Action*

THAT SOLD OVER 600,000 REFRIGERATORS IN 1940

SCORES AGAIN IN '41!



Outstanding units in the 1941 home laundry line are the Pilgrim wringer-type washer shown at left above and the new low wattage Tumbler clothes drier at center. At right is the new fully automatic electric dishwasher.

use. They range from the 1-gallon size, and the 2-gallon "plug-in" Voguette, with its copper tank, to the large 140-gallon size for commercial use. Both Monel and galvanized tank types are included in the Hotpoint electric water heater line, as well as single and double unit types. Master (round), Vogue (square), and table-top models are available, to meet every taste and installation requirement.

The famous, trouble-free Calrod immersion-type heating unit is used in every Hotpoint electric water heater. Models of 18-gallon capacity and larger, use the new, improved low-density Calrod immersion unit.

Four handsome new 1941 Hotpoint Wringer-type washers are being announced in January by the Hotpoint Home Laundry Division. Added to the two new Hotpoint Spinner models, announced late in 1940, these washers provide a line ranging in capacity from 20 gallons to 24 gallons.

All four Hotpoint Wringer Washers employ the famous Thriftivator, whose washing action sends clothes through the three washing zones, cleansing them thoroughly, efficiently, and gently. Hotpoint's famous, trouble-free washer mechanism, having only four moving parts, is standard throughout the line.

The Hotpoint Home Laundry Division has announced a new, Hotpoint Tumbler Clothes Drier, which can be installed on any 110-volt house circuit, but does not replace the Tumbler Clothes Drier introduced last year, in which 7 pounds of clothes can be dried. In the new model air is heated by a 1,400-watt unit. Because of its smaller size and lower wattage, the new Tumbler Clothes Drier greatly expands the field of use for this sanitary, convenient clothes-drying method.

The greatest forward stride in electric dishwashing since the first practical mechanical models were produced, has been made by the Hotpoint Company in developing a line of fully automatic electric dishwashers for 1941. In these new models, one push of a button gives dishes the entire cleansing cycle, from spraying, through washing and rinsing, to warm-air drying. The push-button switch energizes a relay which in turn completes the circuit to an electric timer, mounted on the control panel. One revolution of the timer cam makes and breaks contacts in the proper sequence to wash and dry one dishwasher-load.

Norge

HERALDING the success of the series of five two-day conferences held in Detroit between officials of Norge Division, Borg-Warner Corporation, and their distributors from all parts of the United States and from Canada, Chile, Colombia and Mexico, was the recent announcement by Norge president, Howard E. Blood, that orders received from the distributors during the meetings reached a total in excess of any similar period in Norge history.

"These orders represent the most sincere endorsement the distributors could give the new 1941 line of Norge household appliances which were presented to them for the first time during the conferences," Blood added, "and reflect their complete confidence in business conditions in their territories for next year. Indications that orders would exceed all previous convention totals came during the first of the group meetings when distributors immediately began placing orders in excess of the suggested factory quotas for the first three months of 1941. The trend continued throughout all meetings."

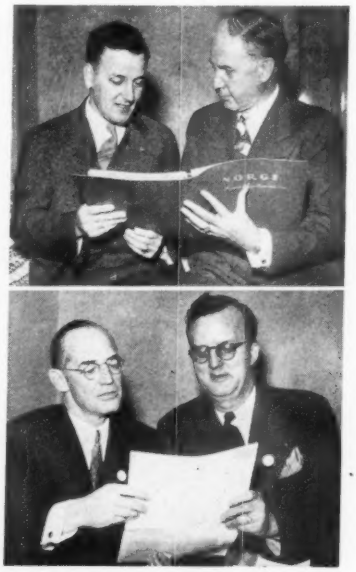
The distributor conference plan which brought distributors and their wholesalesmen to Detroit in territorial groups proved popular with both the distributors and Norge officials. A welcome change from the excitement and confusion of the general conventions held in former years, the conference set-up allowed distributor principals ample time in which to confer with factory officials and to inspect the new refrigerators and the advance 1941 lines of Norge washers and gas and electric ranges.

Packing a wallop into the slogan "See Norge Before You Buy" with a list of feature advantages headed by the new "Night Watch" fully automatic defrosting, Norge Division, Borg-Warner Corporation, presented the 1941 line of Quiet-Flo Rollator refrigerators—three groupings of super deluxe, master deluxe and deluxe models. Basic classification divides the line into five nine-foot models, including a special farm model; four "66 series" models with 6.6 cu. ft. capacity; and three six-foot models of about 6¼ cu. ft. capacity.

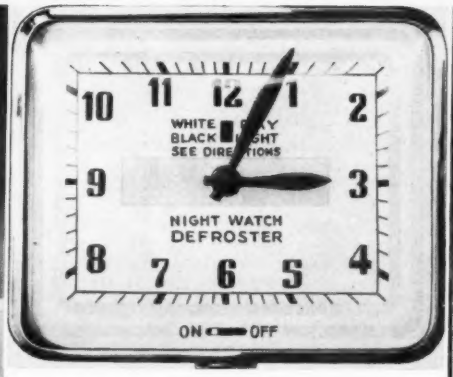
The new "Night-Watch," standard on four models, is considered by Norge as one of the most important major improvements in refrigeration in recent years. It eliminates the ordinary method of manual defrosting and the inconvenience of re-arranging food during defrosting, and at the same time steps up refrigeration performance.

Automatic Defrosting

Every night at midnight, the "Night-Watch" automatically turns off the Rollator cold-maker long enough to melt the slight coating of frost accumulated on the freezer during one day's operation. Defrost drip drains into the Handefroster, which is the compact, out-of-the-way glass container featured by Norge since 1939. Thus, the housewife's defrosting attention is reduced merely to emptying the Handefroster about once a week. This she does with the Handefroster as easily as emptying a pitcher without spilling or splashing.



Norge distributors gathered in Detroit to hear plans for 1941 and see new models. Above, Geo. Lehleitner, Norge Products Co., New Orleans, and M. G. O'Hara, vice president in charge of sales for Norge. Below, F. M. Bultman, Cain & Bultman, Inc., of Jacksonville, and Paul Puffer, Norge's general sales manager.



Left, Norge for 1941 provides big easy sliding vegetable drawer. The new "Night-Watch" defrosts every night. Note large storage below.

By defrosting every night for a short period, the "Night-Watch" keeps the freezer in top condition all day every day. This not only assures better refrigeration, but also helps to minimize electric current cost.

While the "Night-Watch" is the most dramatic Norge contribution to 1941 refrigeration, another innovation almost as spectacular is the new Hollywood beauty styling, which extends from the top super de luxe "9" down through the lowest priced "6." Norge cabinets and doors come together in unbroken lines of flowing beauty. Breaker strips are virtually eliminated, door handles are streamlined in sparkling chromium, and the base in silvery stainless steel is brilliantly modern.

Cellaret Featured

Popular feature last year, and offered again on several models this season, is the Norge Cellaret, which provides an unrefrigerated storage compartment for reserve supplies right at hand for refrigeration when needed. Several other models have a new ventilated bin for dry storage of bulky vegetables.

The exclusive safety-sealed Norge Fast-Freezer is equipped with new mechanical ice trays, which freeze ice cubes quickly and release one cube or a trayful easily. Most models have either a single or full width sliding Hydrovoir drawer under plate glass cover for humid, garden-fresh storage of green vegetables. Several models have sliding shelves for easy accessibility.

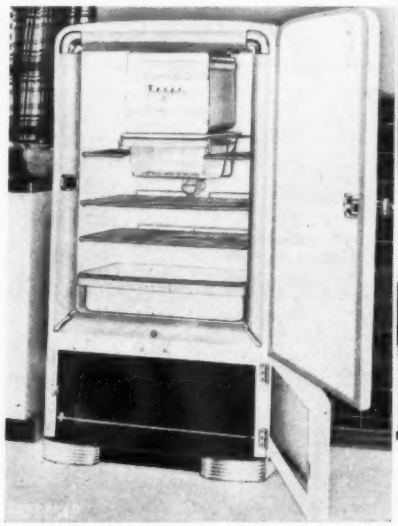
Special Farm Model

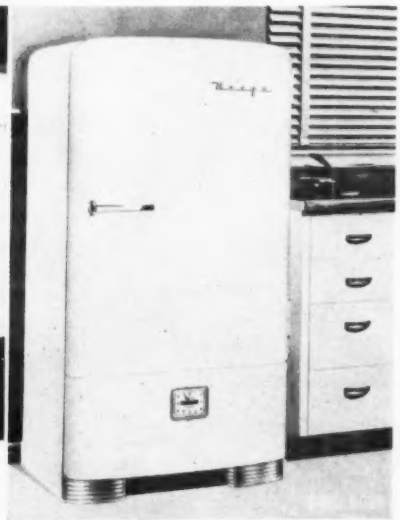
A special Norge model this year is the new DF-901, a full-size "9" designed particularly for use in farm homes. Equipped with the Handefroster and the sliding Coldpack meat and Hydrovoir vegetable drawers, it has a flexible shelf arrangement which can be quickly adapted to many different storage purposes. The woman whose personal income comes from fresh eggs, will find it gives her plenty of space for several large baskets of eggs. Likewise the woman who is interested in safeguarding large quantities of fresh cream can easily arrange the interior to accommodate four or five large cans.

Rollator Mechanism

Famous for 15 years for its simple Rollator compressor, in which "a roller rolls . . . and there's ice," Norge carries on its traditional cold-making performance with the latest edition of the Quiet-Flo Rollator cold-maker, which is used to power all models in the 1941 line. This is a compact, completely sealed unit, with but three moving parts operating slowly in a permanent bath of protecting oil.

The steel shell shuts out dust and grit and tampering fingers and muffles the murmer of the motor to near-silence. Within the shell is the exclusive Norge "Motor-Cooler," which is a ring of flowing, liquid refrigerant that cools the motor-compressor unit to its most efficient operating temperature, regardless of how hot the weather or how completely filled the food compartment.





Inside and out of Model S-663. Above, Handefroster drip jar.

Universal

FROM coast to coast, regional sales managers of Universal major appliance lines assembled at New Britain for a review of 1940 achievements and a preview of models, sales promotion, and advertising, for 1941. The four-day meeting opened on Monday with a special range session at which Universal executives announced "Precision Cooking" as the new Universal Range Theme for 1941.

B. C. Neece, general sales manager, emphasized the fact that sales of ranges for 1940 far exceeded expectations and attributed the fine record to such features as the Mult-I-Heat Control, properly presented by an aggressive sales organization.

H. M. Parsons, newly appointed sales manager of the electric range division, presented each of the nine new "Precision Cooking" models in detail. With the exception of two models which are still equipped with 5-heat switches and combination and apartment-house models, all new Universal ranges are equipped with the many features which go to make up "Precision Cooking." These include the Mult-I-Heat Control, Magic Eye Oven Control, Select-A-Trol, Superheat Units, Bake Fast Oven and the Serv-A-Drawer.

W. J. Cashman, Universal sales promotion manager, indicated how the "Precision Cooking" theme would be worked into the 1941 sales and advertising program. He stated that a powerful barrage of sales messages in leading magazines would invite the thirty-two million families in the United States to see the new Universal line in the showrooms of Universal dealers.

As a companion line to ranges, Harry Parsons unveiled a full line of square-model water heaters for 1941, including three regular models and a table-top model, all in 30, 50 and 86 gallon capacity.

E. L. Farquharson, electric washer sales manager, who had previously opened the meeting and introduced the first two speakers, presented the new line of "Wash-White" washers for 1941. Special attention was given to the new 23 inch, 9 pound tub which gives a capacity half again as big as last year's models. Such sales features as the Automatic Time Switch, Safety Switch and Automatic Rollstop also came in for their share of explanation and discussion.

After the various models had been presented, the attention of the meeting was turned to sales promotion. Mr. Krigner from Lever Brothers told of the extensive tie-in activity being undertaken by his company to promote Universal washers in connection with Rinso. The cumulative effect of this promotion is very considerable since the program includes radio, newspaper and magazine advertising.

Mr. Cashman outlined the new Universal washer sales promotion and advertising program indicating that again this year Universal would be one of the few washer manufacturers to use a sustained program of national magazine advertising.

Tattle-tale Light Stressed

Universal vacuum cleaners came into their own in the final day of the four-day convention. B. C. Neece, general sales manager, opened the session by announcing that sales for 1940 had sky-rocketed to new highs. He complimented Universal distributors and dealers on the fine job they had done and promised that the Universal cleaner line would continue to pioneer new features such as the "tattle-tale" warning light and thus keep ahead of competition.

Lee Moss, Universal vacuum cleaner sales manager, presented the new line of conventional cylinder-type cleaners showing the many outstanding features which have been added for 1941, and emphasized the new Universal step-up plan which introduces a brush-type conventional cleaner with a new low price of $19.95 and also a complete range of models up to $49.95.

In developing the cylinder-type cleaner theme for '41, Mr. Moss stated, "There are 'tattle-tales and tattle-tales' but who ever thought there would be one that everybody likes that we invented—'the tattle-tale light.' Any woman who has ever used one of the cylinder-type vacuum cleaners, knows that one problem which can be plain irritating is having to guess when the dirt bag needs emptying. By introducing a vacuum cleaner with a 'stop-light' has enabled the housewife to quickly visualize when the dirt bag needs emptying."

"We believe," continued Mr. Moss, "that Universal cylinder-type cleaner sales for 1941 will exceed all records established in '40, and again we are going to emphasize in our advertising promotion the 'tattle-tale' story which has become a by-word in the cleaner industry."

In presenting the Lander's Open Top sweeper line, Mr. Moss brought out the features of the sweeper such as the emptying of the dirt pan without carrying the whole sweeper along, the high and low adjustments and the beautifully styled models which were so enthusiastically received by the trade in 1940.

In the afternoon session, W. J. Cashman, Universal sales promotion manager, emphasized the smashing advertising promotional campaign which would be carried on during the coming year. The large amount of newspaper advertising done in 1940 which covered 87 cities and materially helped to stimulate the activity of dealers will be exceeded in 1941. The advertising program for the coming year will cover 107 key markets and should develop large increases in vacuum cleaner sales.

From coast to coast, regional sales managers of Universal major appliance lines assembled at New Britain for a preview of 1941 models. F. C. Fitts, F. S. Dale, A. Arnau, C. J. Lyon, and R. A. Beyers get some first hand experience with electric ranges.

Leonard

BOASTING a host of new beauty and convenience advancements such as the new "Hi-Humid" models with glistening glass interiors and the new "Presto Shelf" that "works magic" with food compartment shelf arrangements, the 1941 line of Leonard electric refrigerators, comprising seven completely new models, was announced at the Leonard sales convention held recently in Detroit.

Leonard will make news by offering an equipped refrigerator at a new low price. A 6¾ cubic-foot equipped refrigerator will sell for $124.95, which is $15 lower than the lowest-priced equipped refrigerator offered by Leonard last year. The lowest, or base price, model is $114.75, the same as last year's Leonard base price, but prices of other models have been lowered as much as $30.

UNIVERSAL *presents* "PRECISION COOKING!"

Only UNIVERSAL offers "Precision Cooking"

BECAUSE *Only* UNIVERSAL HAS THESE 5 STAR FEATURES:

1. Mult-I-Heat Controls with Signalite Indicators.
2. Magic Eye Oven Controls.
3. Select-A-Trol.
4. Superheat Units.
5. Serv-A-Drawer.

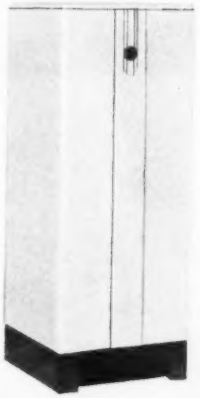
. . . the new idea in electric cookery that will boost your range sales from "simmer" to "high" in 1941!

Here, at last, is what you've been looking for—"Precision Cooking," a brand-new sales idea to increase your business in electric ranges!

What is "Precision Cooking"? Simply this: for the woman who owns a new UNIVERSAL Electric Range, cooking is quicker and easier, and results uniformly better. For each food or dish, she can select *precisely* the right heat and *precisely* the right length of time. The result is more delicious meals prepared in less time and with less work than ever before—*and at lower current costs.* And remember—*only* UNIVERSAL offers "Precision Cooking" because *only* UNIVERSAL has all the features that make it possible!

Look into the sales possibilities of UNIVERSAL "Precision Cooking" today. Wire or write for complete information. Learn how this new sales idea can help you increase your range business in 1941. And bear this in mind: "Precision Cooking" will be . . .

New for '41!



The UNIVERSAL Water Heater

UNIVERSAL now offers a brand-new electric water heater in the modern square design. Fully automatic, and as dependable as it is good-looking. Write or wire today for full particulars!

backed by a powerful national campaign designed to bring customers to your showrooms!

ELECTRIC RANGES — **UNIVERSAL** — WATER HEATERS

THE TRADE MARK KNOWN IN EVERY HOME

LANDERS, FRARY & CLARK • New Britain, Conn.

The line this year consists of five 6¾ cubic-foot cabinets and two 8¾ cubic-foot cabinets. Prices in 1941, which represent savings of as high as $30 on deluxe models, are lower than ever before, particularly in view of the many "extras" incorporated in the new line of Leonard refrigerators.

Big news in the Leonard product story this year is the improved "Hi-Humid" system of controlled humidity, which has been incorporated in two models that make use of an entirely different design idea to create an appealing new kind of refrigerator beauty. These two models—the LH-6 and the LH-8—have gleaming glass shelves and a large, glass-enclosed "Hi-Humid Freshener" compartment that is separated from the large storage compartment above by a glass partition. Two swinging, metal-trimmed glass doors provide access to the "Hi-Humid Freshener" compartment and keep outside air from entering this humidity-laden area when the refrigerator door is opened.

In addition to the freezing and near-freezing zones, there are three other zones of cold in the "Hi-Humid" models, making a total of five cold zones. Each provides specific conditions for proper preservation of many different types of food.

The "super-humid" zone, or "Hi-Humid Freshener," provides the proper humidity conditions for storage of such foods as certain vegetables and fruits which in dry cold soon lose their crispness or fresh appearance, and for storage of left-overs, salads, desserts and other perishables.

The second, or "moderate humid" zone, is for storage of foods that need only a medium amount of moisture, and such foods as eggs, dairy products, citrus fruits and berries can be stored here. "Left-overs" can also be kept in uncovered dishes in this compartment.

The third, or dry, zone comprises the space around the evaporator. This is ideal for storage of canned foods, milk, beverages and bottled liquids.

High Humidity Compartment

Humidity conditions in the new "Hi-Humid" models are provided by a second set of refrigerator coils that cool through the walls and bottom side of the cabinet. This refrigerating circuit is completely automatic and employs the standard refrigerant Freon.

Another unusual and salable feature of the new Leonard line is the five-way "Presto-Shelf," which makes available ample room for tall and bulky objects only when this extra room is needed and which gives the homemaker her choice of five different shelf arrangements.

The "Presto Shelf" consists of an ingenious arrangement which makes use of the right halves of the center and bottom shelves. The right half of the central shelf is divided into quarter-shelf wings which can be lowered or raised. The right half of the bottom shelf, directly under the winged shelf, can be removed entirely. Five arrangements to take care of most any sized containers, a watermelon, a turkey, or even a small milk can, can be readily worked out by lowering one or both wings, by removing, or not removing the bottom half shelf.

The five sixes offered by Leonard this year are expected to form the bulk of the company's refrigerator sales. Together with the two eights, they are claimed to offer dealers an even more convincing "sell-up" story than the exceptionally sound 1940 "sell-up" program, proclaimed by many to be the most logical arrangement of prices and features ever offered retailers. In 1941, the Leonard price structure starts with the big feature six at $114.75 and progresses through a logical sequence of extra-value models to the "Hi-Humid" 8¾ cubic-foot cabinet at $209.95.

The $114.75 model—the LSS-6—offers the buyer plenty of food storage space (6¾ cubic feet) plus all basic features necessary for complete, economical household refrigeration. It provides a large shelf area of 11.8 square feet and a freezing capacity of 84 cubes, or nine pounds of ice.

A new and important innovation to the Leonard line this year is the all-steel cabinet in which the top and sides are formed out of one single sheet of steel. Standard on all models including the LSS-6, this new construction adds strength and rigidity to the cabinet and eliminates the use of wood in Leonard refrigerators. It also gives the cabinets a new seamless design.

An automatic flood light—the "Len-A-Light"—is recessed in a reflecting panel behind the Zero-Freezer. In addition to illuminating the entire food compartment, the "Len-A-Light" lights the interior of the evaporator.

The Zero-Freezer in the LSS-6 is made of stainless steel and has four 21-cube ice trays and additional space for storage of frozen foods, fowl and game. It has a new porcelain-finished door with a brilliant chromo-finished decorative plate and a white plastic handle. The door has a rubber bumper, and twin springs hold it open or closed.

A large moonstone glass chilling tray with a 5-quart capacity is located under the Zero-Freezer, where it can be used for cold-storage of foods

The "Presto Shelf" in the new Leonards provides five different interior shelf arrangements. Above, the evaporator in the new models is large enough to hold bulky ice cream cakes and pies. The Temperature Control has 13 operating speeds. The new stainless steel strip around the door is much easier to clean.

Tops in Preference

—BECAUSE IT'S TOPS IN PERFORMANCE!

"It's G-E for me!"

NEWS!

About The New G-E ALL-STAR REFRIGERATOR

It's "Hats Off" to the new 1941 G-E All-Star Refrigerator at G-E Dealer Previews everywhere! Exciting new beauty, New 10-Star Storage Features including the New Butter Conditioner and New Dry Storage Drawer. No wonder Public Preference for the G-E will be even greater in 1941.

More people prefer the General Electric Refrigerator than any other make . . . . A powerful statement, backed by recent independent consumer surveys made by four national magazines among refrigerator owners and prospective buyers. Over 50% more people expressed a preference for G-E than mentioned the next leading brand!

The General Electric Thrift Unit has established the greatest performance record in America . . . . Another powerful statement backed by years and years of faithful service in millions of homes. That's the reason for the tremendous public preference for G-E. That's why G-E dealers and salesmen say "Ask Your Neighbor!" It's the best sales closer of all.

GENERAL ELECTRIC

The "Hi-Humid Freshener" compartment in the new 1941 Leonard models provides a "super-humid" zone for storage of such foods as certain vegetables and fruits which in dry cold soon loose their crispness or fresh appearance. Right, plenty of space for frozen foods, game and fowl is provided in the freezing compartment of the new 1941 Leonards. A double-width dessert tray makes an ideal storage place for articles of this type.

and for drippings from defrosting.

The LSS-6, like all 1941 Leonard models, is powered by the money-saving Glacier Sealed unit, which is said to run less than 20 per cent of the time and which carries Leonard's five-year protection plan. In 1940 this sealed unit is reported to have established an unprecedented record for freedom from service, and it is claimed that less than one-half of one per cent of the units in use were returned to the factory.

The LSS-6 has a new type of door construction that makes available several more inches in the food compartment. The door opening is flush with the door itself.

Crosley

A LINE of 1941 refrigerators stressing the fundamental needs "not only of the user but also of those who sell it," was announced by The Crosley Corporation at its national distributor convention held at the Taft Theater. Totaling four six-foot and two eight-foot models, in addition to the apartment house three- and four-foot models, the 1941 line of Crosley refrigerators places emphasis on food convenience and food protection to a degree never approached in models of previous years.

The new refrigerators have been designed not only for today's and tomorrow's needs but for the day after tomorrow. Extra space for bottles, frozen foods, meats, fish, game and other items of food, is indicative of Crosley's appreciation of the trend in consumer buying habits.

Paramount in Crosley's greater attention to food accessibility is the patented new Super Shelvador, a distinct improvement on the "shelves-in-the door" idea heretofore used by Crosley. In contrast to last year's wire-basket shelves, the 1941 Super

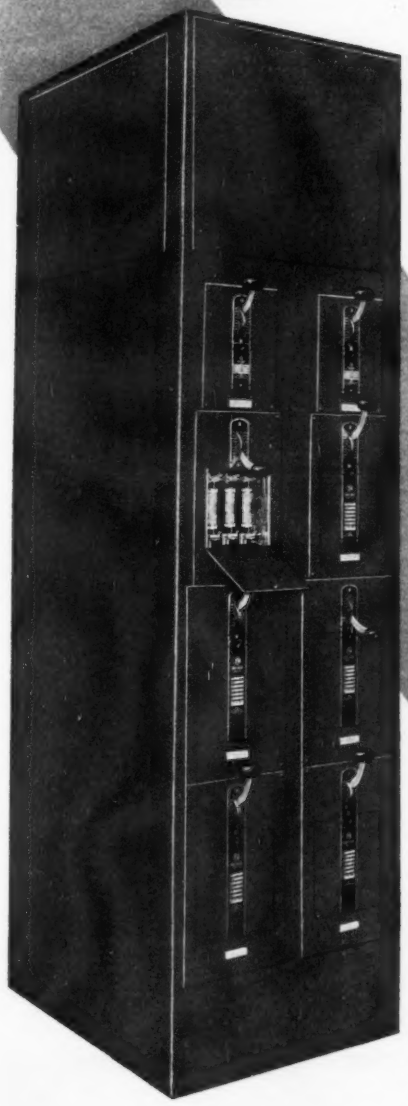
Jack Crossin, manager of Crosley's refrigeration division, presents the 1941 line of refrigerator models at the National convention of Crosley distributors held at the Taft Theatre, Cincinnati, early in December. With him was the troupe of girls who presented Crosley products at the New York World's Fair.

Here's a Dependable Switchboard!

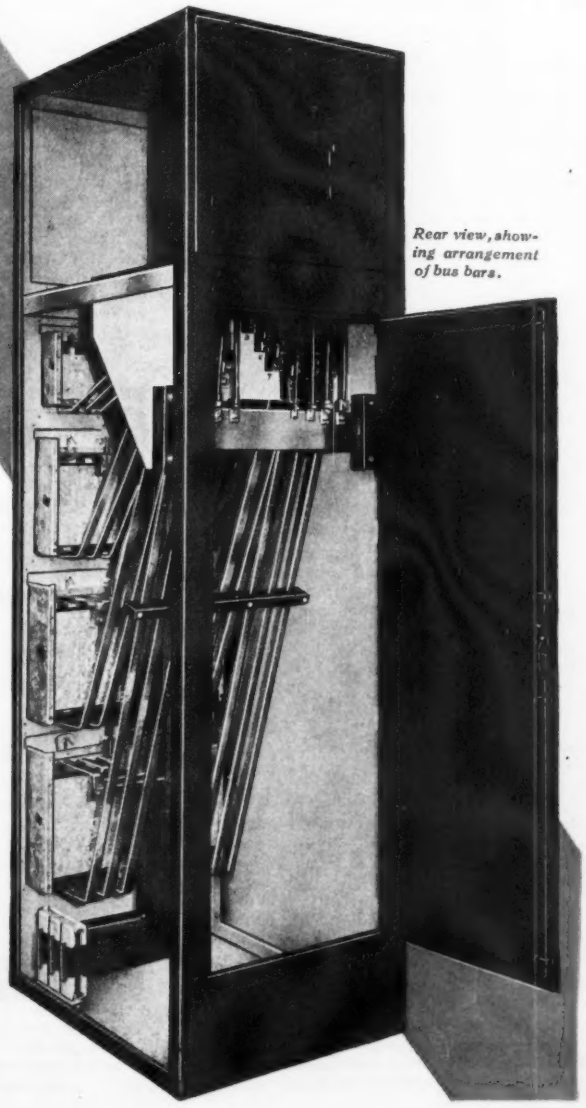
Architects can conscientiously specify it. Engineers can tie it in readily with the power and lighting systems. Contractors can install it quickly and efficiently. And plant owners will appreciate its trouble-free operation.

(FA) Shutlbrak Switch Switchboards eliminate "switchboard trouble." They are built for use where *dependability* is a necessity — and in these days of defense preparation, this is of the utmost importance.

These new, safety type, one-piece panel switchboards are ideal for service entrance, motor control and other power and light distribution installations. Designed to occupy a minimum of space, each steel panel is self-contained, with all of the switch units connected to the bus bars of that section. Each switchboard panel unit is individually enclosed, with a junction box built into the top of the panel. Any number of these units may be joined side by side, or otherwise arranged to fit available space.



Switchboard Panel Unit above has 2—60 amp., 2—100 amp. and 4—200 amp. switches in a 28" width.



Rear view, showing arrangement of bus bars.

For More Complete Information

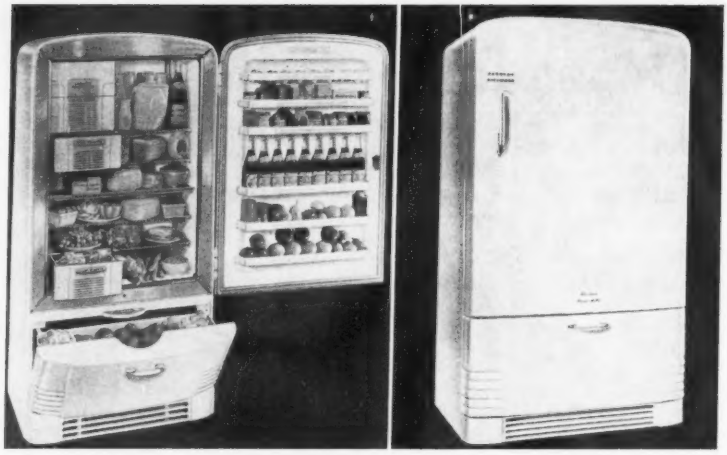
write for Bulletin 59 . . . And consult the nearest (FA) Sales-Engineer, whose services are yours without obligation. See Sweet's Catalog (Architectural and Industrial-Engineering sections) or Electrical Buyers' Reference, for their names and addresses. Or, write the Frank Adam Electric Co., St. Louis, Mo.

EST. THE SIGN OF A FA 1891 BETTER JOB

Frank Adam

1891 FIFTY YEARS SERVICE 1941

FRANK ADAM ELECTRIC CO. ST. LOUIS, MO. U.S.A.



This 8 cu. ft. model of the Dulux line provides storage conditions for hard-to-keep foods in a separate Moist-Kold compartment with glass shelf partition. Six extra shelves are provided in door.

Shelvador incorporates Dulux-finished steel shelves with bottoms removable for easy cleaning. Without any sacrifice of food chamber space, it is possible to place, in the new Crosley door alone, practically enough food to fill an ordinary refrigerator. One of the door shelves is an all-steel bottle rack that accommodates eight 12-ounce bottles. This innovation, together with extra bottle space near the refrigerator's cooling unit, gives the 1941 Crosley almost three times as much bottle-storage capacity as comparable-sized 1940 models had.

The Crosley "Croslite" Door-Liner is a one-piece plastic liner that is made extra strong. Finished in Dulux it is easy to clean and will stay gleaming white through the long life of the refrigerator. The door's thick protecting wall of Fiberglas and the Croslite door-liner assure maximum insulation and economical use of electric current. Every Crosley refrigerator cabinet has a balloon-type door gasket.

One-piece, all-steel cabinets, double-finished in baked enamel, are another major Crosley improvement for 1941. Bases are continuous with the structural steel frame, and terminate in 4-point "gliders" for full protection against damage to floors and floor coverings. Fiberglas insulation is used throughout.

The Crosley Electrosaver has been refined, providing greater quietness. The condenser, with 16 per cent more surface area than in 1940, lies flat below the compressor. It is cooled by natural convection, floor-level air reaching it through louvres which form a decorative exterior for the base of the cabinet. A new three-point mounting for the unit not only dampens vibration but also eliminates the need for extra bolts for shipping purposes. The refrigerant used is Freon.

Two of the five new Crosley refrigerators, the DM-641 and the DM-841, are "Moist-Kold" refrigerators. Refinements in the highly successful "Moist-Kold" system used by Crosley last year give these six-foot and eight-foot 1941 models an even greater ability to protect high-moisture-content foods placed in the lower half of the food chamber. The 1941 system incorporates a secondary coil placed out of the way against the rear of the "Moist-Kold" food chamber; a plate glass seal-shelf, and a simple, manually-set moisture regulator known as the Ventilair. Humidity in the "Moist-Kold" compartment is very high. Moreover, the compartment contains a sealed Clear-Vision crisper in which humidity approaches 100 per cent.

Two of the remainder of the five 1941 Crosley refrigerators are "Master" models, the SE-641 and SE-841. Those six-foot and eight-foot refrigerators incorporate all the fundamental improvements of the "DM" series with the exception of a "Moist-Kold" system. The "SE" series offers one-piece all-steel cabinets, Fiberglas insulation, refined Electrosaver unit and all the benefits of the new Super Shelvador.

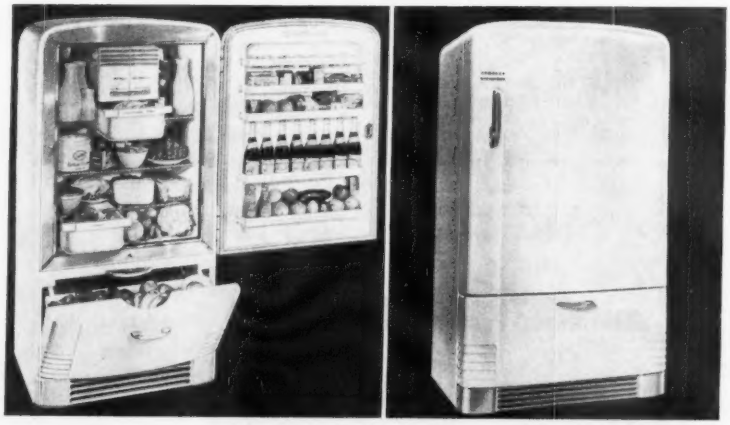
Features of the new "SE" Crosleys include an advanced type of Freezorcold evaporator, in which ice-making and frozen-storage are facilitated by a two-door compartment; a Defrost Indicator that warns when the refrigerator needs defrosting; extra large cold-storage chest for meats, clear-vision crisper of increased size; shelf thermometer, a new temperature control panel located conveniently at the top of the condensing-unit-compartment door; a large Storabin for foods not requiring constant refrigeration; metal shelf supports; automatic interior light; and attractive, easy-acting, plastic-and chrome exterior hardware.

All ice trays in every model in the new line are of the "quick release" type. Ice-cube size has been increased, and each tray furnishes a full two pounds of ice. The "DM" models feature a DeLuxe type of quick-release tray. In all five new Crosley models, ice trays are anodically-treated aluminum grids.

Already inherently fast-freezing, the new Crosleys all stress extra fast freezing. This results from metal-to-metal contact of the refrigerant tube with the ice-tray shelf. In the "DM" models the Freezorcold is a gold-and Dulux finished ensemble located at the side of the food chamber and incorporating the ice-making compartment, frozen-storage chest and meat-storage tray. This design harmonizes with the gold-and-Dulux finished Clear-Vision crisper used in the "DM" models.

The other three models in the line feature center-hung Freezorcolds, with styling and escutcheons which also harmonize with their respective meat-storage trays and crispers.

The lowest priced model among the 1941 Crosley refrigerators—the S-641—is confidently predicted by Crosley executives to set a new standard of value in six-foot refrigerators. Definitely not a "stripped" model, the S-641 features the one-piece all-steel cabinet, Super Shelvador, Fiberglas insulation, Freezorcold, moonstone meat-storage chest, automatic light and large-size crisper.



Here are interior and exterior views of the 6 cu. ft. model in the Master line. Outstanding feature is storage space in door which Crosley will feature with the slogan "Twice as much food to the front."

NEWS of the INDUSTRY

Power Commission Reports On Electric Power Supply

The Federal Power Commission has submitted to President Roosevelt its initial report on "Electric Power Requirements and Supply in the United States," the first of a series of monthly reports showing in graphical form the relation between power loads and the capacity available to supply them in the several areas into which the country has been divided for this continuing survey of power needs for national defense.

Compiled by the Commission's National Defense Power Staff, this information, part of which is presented in terms of kilowatts of demand and kilowatts of capacity, covers, a six-year period—four years of past tendencies, and two years of forecasts. The information is shown on 50 separate charts, each of which represents an area, or combination of areas, in which capacities shown are, or will be, available to serve the loads shown.

The commission's analysis of the current reports indicates the following:

1. The demands for electric power, including those required for the national defense loads can be met during the year 1941 in most cases by the existing facilities, although "hot-spots" and "bottlenecks" in certain local areas are likely to develop.

2. In most areas the full effect of the national defense loads will probably not be felt until the year 1942, when the aggregate deficiencies in available generating capacity in certain areas will probably exceed 1,500,000 kilowatts.

3. The areas where the greatest need is likely to develop are:
   - Upper New York State.
   - The Philadelphia Region, including Eastern Pennsylvania and New Jersey.
   - The Pittsburgh Region, including Western Pennsylvania.
   - The Chicago and Northern Illinois and Northern Indiana Districts.
   - St. Paul and Eastern Minesota.
   - Southeastern States, including Tennessee Valley Area, North and South Carolina, Alabama and Georgia.
   - Arkansas, Northern Louisiana and Western Mississippi.
   - Idaho and Utah.
   - San Francisco and the Northern California and Southern Oregon Region.

4. Several of the above areas in which additional capacity will be required are closely associated with important river basin projects, including upper New York State, which will be supplied by the proposed St. Lawrence development, the Tennessee Valley Area in which additional TVA capacity has recently been authorized, the North and South Carolina area where important developments on the Santee and Savannah Rivers are either in progress or awaiting authorization, and the Arkansas, Northern Louisiana and Western Mississippi Area which will eventually be benefited by developments in the White River Basin.

5. In certain other areas, while it appears that the generating capacity installed and on order may be sufficient to meet the expected loads, the situation may be critical due to limitations of existing local transmission and generating facilities. These areas are:
   - New England.
   - Ohio, Indiana and West Virginia.
   - Norfolk and the Eastern Virginia Region.
   - Florida, Central and Northern Texas.

6. In some parts of the country, even though additional generating capacity is on order and public and Federal projects are under construction, installation in many cases will not be completed in time to serve the 1942 loads and other measures will have to be adopted.

Southwestern Gas & Electric Discontinues Merchandising

The Shreveport Division of Southwestern Gas and Electric Company, which maintains headquarters at Shreveport, La., recently announced that the merchandise department would discontinue the sale of merchandise after December 1, with the exception of lamp bulbs and fuses.

The display floor formerly used for merchandise sales displays will be turned over to Shreveport electrical dealers for the display of their merchandise. Under the new operating plan, electrical appliance dealers in Shreveport will receive every cooperation possible from the utility company.

According to R. F. Scott, new business manager for the Shreveport Division, the cooperating dealers have agreed to change displays at least once a month in keeping with seasonal items and campaign emphasis. Major appliance displays, however, will be more or less permanent.

Virginia Electric & Power First in Safety Contest

For the third time in succession, the National Safety Congress has presented to the Virginia Electric and Power Company the first-place award for the lowest accident frequency per million man-hours worked. Eighteen of the leading gas and electric utility companies of the nation competed in this contest.

The lost time accident frequency of the Virginia Electric and Power Company for the contest period was 1.521 per million man-hours worked. This was slightly higher than the record established last year which was 1.251.

Included among the eighteen companies competing in this classification was the Georgia Power Company with a frequency rating which placed them in fifth place.

The outstanding feature of Chattanooga's new street lighting system is the use of 80 pendant mercury-incandescent luminaires in the downtown area. Developed by General Electric engineers, each luminaire operates two 300-watt incandescent lamps and one 400-watt mercury lamp. The luminaires are spaced 100 feet apart and opposite one another on both sides of the street. This night picture was taken along Broad Street.

Edison Institute Announces Awards

The increasing importance of fluorescent lighting has resulted in its inclusion this year for the first time in annual competition for the Augustus D. Curtis Award, according to an announcement from Edison Electric Institute, which administers the competition each year.

In order to qualify for the competition, lighting installations must have been made during the twelve-month period ending March 1, 1941. The completed presentations must be filed at Edison Electric Institute, 420 Lexington Avenue, New York, on or before April 1, 1941.

To be eligible for the awards an installation must either be a completely new commercial interior installation, or involve the general relighting of a commercial interior. High levels of illumination as measured in footcandles and increases in kilowatts will both be considered in determining the results of the competition. Relighting schemes must show a significant comparison between old and new, and a marked improvement in illumination results must be evident. The lighting may be completely fluorescent, a combination of fluorescent and incandescent, or a complete incandescent installation.

The first and second awards will consist of a certificate to the utility company and a cash prize to the individual responsible for that company's achievement. Third and fourth cash prizes will also be awarded to individuals. The first cash prize will be $20[illegible] second prize, $100; third prize, $50, and fourth prize, $25. Winners of the Augustus D. Curtis Award will be announced at the Annual Convention of Edison Electric Institute in June, 1941.

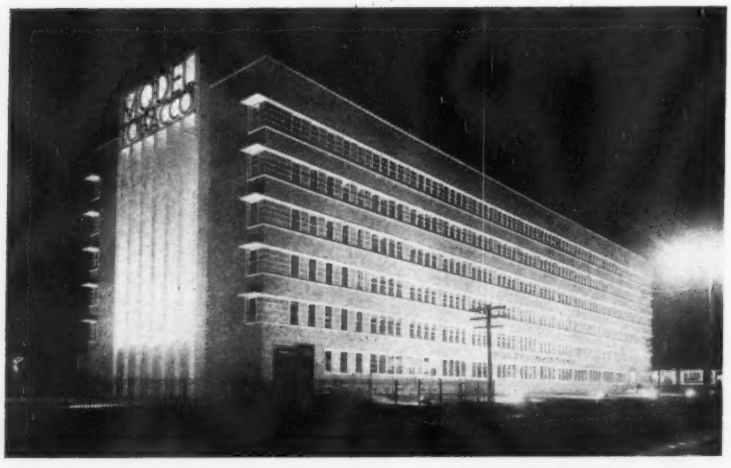
* * *

Utility representatives who sell, lease or rent during the calendar year 1941 the greatest number of individual domestic electric ranges may win substantial prize money from the R. B. Marshall Award of $500 administered by Edison Electric Institute.

The purpose of the award is to stimulate activity and efficiency among utility retail salesmen. The award itself is divided into five prizes of $100 each, one in each of five classifications. Class 1 includes companies serving 25,000 domestic customers or less. Classes 2, 3 and 4, respectively, include companies serving from 25,001 to 50,000 customers, from 50,001 to 100,000 customers, and from 100,001 to 250,000 customers. Class 5 consists of companies which serve more than 250,000 domestic customers.

Ranges must be of a rated capacity of five kilowatts or more. The sales person must have been in the employ of the utility company for at least six months of the calendar year, 1941, and must be in the company's employ at the close of the contest period, December 31, 1941. The closed sale and installation of a range will count as two points, while a range placed on trial or rental will be credited as one point, but in the latter case must be in service at least three months to be included. Sales at wholesale to apartment houses are not included.

The chief commercial executive of the utility company must approve the salesman's record of accomplishment and forward it to Edison Electric Institute in a letter giving the results in points and an expression of the general sales ability of the contestant with particular reference to his relationship with the trade and the consumer. Closing date for the submission of entries is March 1, 1941.



Floodlights give "that added touch" to the attractive Model Tobacco plant of the United States Tobacco Company in Richmond. Credited with being the outstanding industrial building in the South, this plant is modern to the last detail and may be considered representative of the well-planned "industrial building of tomorrow." G-E floodlights illuminate both sides of the buildings and the pilasters at each end.

New Officers Selected For New Orleans Assn.

Archer G. Riddick, who for the past several years has taken a very active part in the household appliance field in New Orleans, was elected president of the Electrical Association of New Orleans at the annual dinner meeting and election held in the Hunt Room of the St. Charles Hotel, December 16.

Mr. Riddick, who is manager of the household appliances department of C. T. Patterson Company, Inc., of New Orleans, has been very active in the affairs of the Association for a number of years. Harold E. Meade, of New Orleans Public Service, Inc., is the retiring president.

A. J. McCall, manager of the Graybar Electric Company, was elected executive vice president. Other officers elected were: P. E. Ledhe, vice president of the Electron Engineering Company, Inc., vice president of the wholesalers, utilities, and manufacturers division; W. B. Meek, manager of the Monroe Hardware Company, vice president of the refrigeration division; Ed Phillips, head of the Edw. Phillips Electric Company, vice president of the electrical contractors division; and R. A. Machenroth, manager of the Hunter Fan & Motor Company in New Orleans, vice president of the air conditioning and ventilation division.

Three officers who were re-elected are all from the New Orleans Public Service. They are, George J. Segel, re-elected secretary; I. W. Tufts, renamed treasurer; and W. E. Clement, re-elected director of publicity.

Aleck Mattes, electrical contractor; E. N. Avengo, of the New Orleans Public Service, Inc., and H. E. Meade, also of the New Orleans Public Service, Inc., were named to the executive committee for two years. W. J. Amoss, New Orleans Public Service, Inc.; Joseph Du-

pree, General Electric Company, C. L. Osterberger, Louisiana Power & Light Company, were held over on the executive committee for one year.

Lane Heads Oklahoma Utilities Association

The twenty-second annual convention of the Oklahoma Utilities Association will be held in Tulsa, Okla., March 17 and 18, 1941, according to announcement by Kate A. Niblack, secretary.

New officers of the association, to serve throughout 1941, were elected at a meeting of the board of directors of the association held in Tulsa on December 5. These are: president, R. K. Lane, president, Public Service Company of Oklahoma, Tulsa; first vice president, W. L. Woodward, president, Zenith Gas System, Inc., Alva; second vice president, J. C. Happenny, president, Oklahoma Power & Water Co., Sand Springs; treasurer, B. M. Lester, vice president and treasurer, Oklahoma Gas and Electric Co., Oklahoma City; secretary, Kate A. Niblack, Oklahoma City (re-elected).

Following are the new members of the board of directors: J. P. Arnold, Tulsa; E. C. Joullian, Oklahoma City; Frank B. Long, Tulsa; S. I. McElhoes, Chickasha; A. F. Potter, Bartlesville; W. L. Woodward, Alva; and J. C. Happenny, Sand Springs.

Holdover directors are: C. A. Breitung, Ada; George A. Davis, and Glen C. Kiley, both of Oklahoma City; and R. K. Lane, Tulsa.

W. L. Woodward heads a committee, with J. C. Happenny, Glenn C. Kiley, Paul K. Sticelber and William H. Bagley, to arrange for the annual convention.

The masterpiece of electric kitchen promotion, developed by the Modern Kitchen Bureau and known as "Alice in Electrical Wonderland" got its first comprehensive public showing in Mobile, Ala., recently. It drew 9,000 persons or all the Saenger Theatre would hold in its 3-day showing. This was a cooperative promotion by the Alabama Power Company, the Mobile Press Register, 9 electrical dealers, and 16 other business houses of Mobile. The utility furnished two home economists, Mrs. Sarah Duncan White and Miss Theresa Branch, furnished the script for the play, made the range wiring installation on the theatre rostrum and associated in training the players who were furnished by the dramatics department of the Murphy High School. In addition the power company also arranged for the donation of the grand prize—a $149.50 electric range.

Water Heater Sales Continue Climb

Gathering up almost amazing momentum, and powered by Modern Kitchen Bureau advertising material, electric water heater sales are rolling merrily along. Utilities have kept the advertising power turned on and dealer campaigns have been more vigorous and far more numerous.

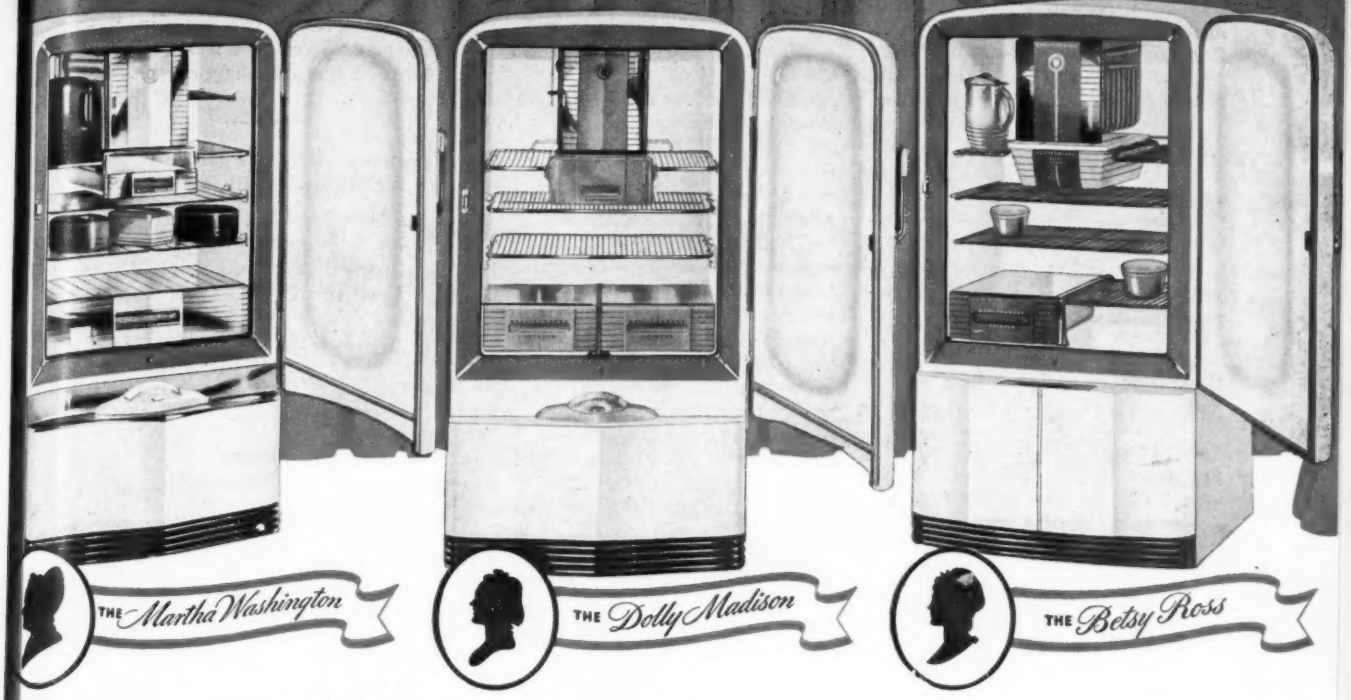
An indication of the interest in electric water heater promotion is the fact that up to November 1, two hundred ten utilities were using MKB plans, buying 427,000 pieces of material. This compares with only forty utilities and 66,000 pieces of material in 1938.

It was in the spring of 1940 that Donald Duck was singled out by MKB to lead the big water heater campaign. No choice could have been happier. Donald's following is tremendous. Donald commands attention; Donald puts his story across. And now from MKB headquarters come the glad tidings that Donald Duck is to be employed again to pilot the 1941 drive. Moreover, his coming campaign is to be no solo flight. Three popular, energetic nephews are joining forces with Uncle Don.

November Washer Shipments Third Highest in History

Household washer shipments in November were third highest in the industry's history for that month, the total being 100,787 as com-

FOR BETTER LIVING IN THE AMERICAN WAY ☆



THE NEW 1941 Westinghouse REFRIGERATORS

are ready!... with

It's the "DREAM LINE" of 1941—this glamorous new group of COLOR-STYLED Westinghouse Refrigerators! From top to bottom, in every price bracket, there's a model to suit *every* prospect's individual taste.

This new line includes four super-value SIXES . . . two beautiful SEVENS (competitive with most "sixes" displayed by others) . . . and three eye-filling NINE cubic foot models! Popular sizes are available in all-porcelain as well as bonderized Dulux, and there are special models, large and small, to fit every family need.

New Westinghouse models are powered with the famous sealed-in-steel ECONOMIZER mechanism, now quieter and more efficient than ever. Cabinets, frosters and fittings reflect the greatest design achievements in Westinghouse Refrigerator history. And increased production capacity assures an ample supply in 1941 of all popular Westinghouse models.

NEW COLOR-STYLING! SELLING FEATURES!

NEW INCREASED CAPACITY! "STEP-UP" PRICING!

NEW OPPORTUNITIES FOR SALES AND PROFIT!

SEE YOUR LOCAL SHOWING of the COMPLETE LINE

Ask your distributor for the time and place of your complete local Westinghouse showing. See it—get all the facts.

WESTINGHOUSE W

SELL THE DIFFERENT REFRIGERATOR WITH *EXCLUSIVE* TRUE-TEMP CONTROL

Only Westinghouse has TRUE-TEMP CONTROL—a PLUS value that gives users SUPER MARKET Food Protection. A giant advertising and promotional campaign will put this advantage to work for YOU in the public mind. Don't miss out on the extra profits it brings. Call your distributor or write direct for complete details.

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY
DEPARTMENT 1020 MANSFIELD, OHIO

STEP IT UP with Westinghouse in '41

pared to 102,990 a year ago and 102,689 in November, 1936, according to announcement by Joseph R. Bohnen, executive secretary-treasurer of the American Washer and Ironer Manufacturers' Association. They took the usual seasonal drop from the preceding month, the all-time high October, when shipments aggregated 168,527.

Ironers shipped in November totalled 18,925, compared to 23,282 in October, and an advance of 89.44 per cent over 9,990 shipped in November, 1939.

Lynch Succeeds Baker as Arkansas Power Executive

William E. Baker, executive vice president and treasurer of the Arkansas Power and Light Co., and one of Pine Bluff's leaders in business and civic circles died at his home November 21, following a heart attack. Mr. Baker had made his headquarters in Pine Bluff since the Arkansas Power & Light Company established general offices there in 1917.

Mr. Baker was born at Mt. Lebanon, La. His first job was with the Southern Telephone Company, operated by Harvey C. Couch. When Mr. Couch and his associates sold the firm in 1911, Mr. Baker became associated with the Louisiana Creosoting Company and the Valley Land and Timber Company, firms in which Mr. Couch was also interested. In 1915, he became associated with the Arkansas Power and Light Co., and was appointed general auditor in 1917. He was elected treasurer and assistant secretary of the company in 1922 and later was elected a member of the board of directors.

Cecil S. Lynch, formerly chief engineer of the Arkansas Power & Light Co., and recognized as one of the best-informed power engineers in the South, has been elected executive vice president to succeed Mr. Baker.

Mr. Lynch joined the Arkansas Power & Light Co. in 1919 and played a leading part in the development of the interconnected systems in Louisiana and Mississippi. Previous to his appointment as chief engineer, he had charge of hydro-plant construction.

Announced at the same time was the appointment of J. L. Bodie, as acting treasurer. Mr. Bodie was formerly assistant treasurer and has been with the company since 1923.

Graybar Vice President Retires After 39 Years

Effective December 31, 1940, George E. Cullinan, senior vice president, retires from the Graybar Electric Company, Inc., after having completed thirty-nine years and five months of active service.

Mr. Cullinan was born in Geneseo, New York, August 5, 1878, and obtained his early education at Geneseo Normal School preparatory to entering Williams College. After his graduation from Williams College in 1901, Mr. Cullinan joined the statistical department of the Western Electric Company. His record with the company has been one of steady advancement.

When the supply department became a distinct organization of the Western Electric Company in 1923, Mr. Cullinan was made its general sales manager. In 1926, he became vice president in charge of sales of the Graybar Electric Company which replaced the supply department of Western Electric, and in 1940, he was made senior vice president.

Personnel Changes Made By Tide Water Power Co.

Five appointments in the executive department of the Tide Water Power Company were announced early in December by F. A. Matthes, chairman of the board of directors. A. E. Jones was named general manager of the company and E. W. Mange was named assistant general manager and personnel director.

Other appointments were: E. E. Kilburn, general superintendent of transmission and distribution; Henry Sherman, general superintendent of production; and George Stovall, district manager at Morehead City.

Ferguson Named President Of Ky.-Tenn. Light & Power

R. H. Ferguson, formerly vice president and general manager of the Georgia Power and Light Company, with headquarters in Valdosta, has been elected president of the Kentucky-Tennessee Light and Power Company, with headquarters in Bowling Green, Ky.

New Orleans Dealer Expands Operations

The Oak Appliance Company, suburban New Orleans dealer for Norge refrigerator and Bendix washing machines, has opened two branches as a result of increased demand, the officers of this firm said.

The Oak company has operated for several years at 8220 Oak street in Carrollton, suburban business section, and last month announced opening of sales offices at 5335 Canal street, a central business area location, and at 1301 North Rampart street, a close-in location.

In connection with the expansion, the partners of this firm, O. L. Redford and J. C. Ackerman, announced the company is taking on a dealership for Carrier air conditioning machines for retail at the three locations.

Spacious new quarters were occupied recently by the West Virginia Electric Co., at 621 Fourth Avenue, Huntington, W. Va. Shown here is the large fixture display room; behind it is a well planned stock room. The company wholesales a complete line of electrical supplies, fixtures, and electric lamps. Joseph Colker and Charles Mandell are joint owners. Shown in the photograph, from left to right, are Mr. Mandell, Earl Stover, stock clerk, Mr. Colker, and Reed White, store manager.

Electric Range SALES BREAK ALL RECORDS . . . INDUSTRY ADVERTISING DOUBLED IN 1941!

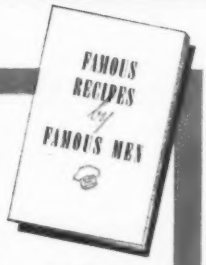
MORE electric ranges sold than in any other year in history! That was 1940! The Modern Kitchen Bureau's electric range national advertising doubled! *That's* 1941! More electric range sales than *ever* . . . that's 1941, too!

Five leading women's and home service magazines carry the copy. Ads every month. Ads with a powerful, *proved* selling appeal. A total of 60,000,000 messages to electric cooking prospects . . . *your* prospects!

A *double-barrelled* promotion for Spring! RECORD-YEAR Spring showing PLUS Round-Up of He-Man Recipes! A life-size cut-out window display painted specially for MKB by James Montgomery Flagg! Flagg art to use in your own newspaper advertising! A recipe booklet that is one of the most unusual ever produced! A *twin* promotion that will build traffic and make sales!

1941 is your year of bigger opportunity. The Modern Kitchen Bureau offers you *more* sales helps and *more* national advertising. Plan now to *tie* in and *cash* in!

Ask your electric league, distributor, utility, or any of the manufacturers listed below. Or write to:



A special MKB collection of Famous Recipes by Famous Men put together in a traffic building booklet that every woman in town will want! James Montgomery Flagg, Victor McLaglen, Guy Kibbee, Hal Phyfe and many other famous He-Man cooks are there, each with his own favorite recipe! So *be there* yourself and cash in on this spectacular promotion that is backed by the *biggest* national advertising campaign on electric ranges in MKB history!

THE MODERN KITCHEN BUREAU, 420 Lexington Avenue, New York, N. Y.

ESTATE • FRIGIDAIRE • GENERAL ELECTRIC • GIBSON • GLOBE-AMERICAN • HOTPOINT • KELVINATOR • MONARCH • NORGE • STEWART-WARNER • UNIVERSAL • WESTINGHOUSE

Virginia Inspectors Meet in Charlottesville

The Virginia Chapter, I.A.E.I., held its sixth regular meeting in the Monticello Hotel, Charlottesville, Virginia, in November, with Chairman Murphy presiding and a registered attendance of sixty-eight.

A discussion on "The Purpose of Grounding," was presented by Arthur L. Abbott, involving questions on insulation failures due to direct strokes of lighting, induced surges, etc. "Working Tools for New Code Wires," an illustrated address by H. G. Knoderer, of the General Electric Company, proved very instructive and "Wireometers" were distributed to the members, with appropriate explanations and demonstrations of its usefulness.

"The Electrical Inspector in the National Defense Program," was presented by Wm. J. Canada. The subject was deemed of such importance that the International Executive Council was petitioned to again present the subject matter to the National Defense Council and the chairman appointed a permanent committee on questions of national defense.

Victor H. Tousley led a discussion on "Highlights of the 1940 Code," which was interspersed with many questions and answers. O. K. Coleman gave a very concise talk on "Branch Circuits." In the ensuing discussion, opinion was divided as to whether, or not, the branch circuit of No. 12 wire, mentioned in section 2109, was intended to be considered as a 20 ampere branch circuit.

The first day's session was enlivened with a banquet at 6:30 P.M. and a lecture on Elementary Electricity and Magnetism, by Dr. Llewellyn G. Hoxton, Professor of Physics, University of Virginia. Many of the guest speakers, considered as co-founders of this Chapter, were called upon and responded with remarks appropriate to its third anniversary.

The second day's session was opened with a Question Bee, W. E. Armstrong serving as interlocutor. This feature was very instructive and amusing, the winners were declared to be Dr. M. G. Lloyd and E. W. Dunn, who were each awarded prizes.

"Power Factor Problems," were discussed by Dr. Lawrence R. Quarles, assistant professor of electrical engineering, University of Virginia, who illustrated his subject on the blackboard and stressed its particular relation to fluorescent lighting.

A lecture on "Motors" was given by James S. Miller, Jr., associate professor of electrical engineering, University of Virginia. "Distribution Problems" were discussed by R. C. Daffron, distribution engineer, Virginia Electric & Power Company.

Kentucky Inspectors Will Meet in Louisville

The Kentucky Chapter, International Association of Electrical Inspectors, will hold its first 1941 meeting on Thursday and Friday, January 16-17, at the Brown Hotel in Louisville, Ky., according to announcement by Victor F. Knadler, secretary. An interesting program has been planned and will include topics of vital importance to every one associated with the electrical industry.

Honor Roll of Southern Section

The following members of the Southern Section, International Association of Electrical Inspectors, have enrolled one or more new members for the association since the current membership campaign was initiated at the close of the annual meeting, September 14. Numbers at right indicate number of new members enrolled by each individual.

Bagwell, H. O.—Carrollton, Ga.	1
Bommer, A. J.—Dallas, Texas	5
Camus, Frank—Shreveport, La.	6
Dougherty, C. H.—Franklin, Va.	1
Edwards, Virge—Lyon, Miss.	16
Fisher, J. G.—Jackson, Miss.	3
Fletcher, G. R.—Alexandria, Va.	2
Goodson, Fred—Houston, Texas	3
Hancock, A. E.—Austin, Texas	1
Hendricks, R. B.—San Antonio	5
Jones, C. T.—Atlanta, Ga.	1
Keeley, K. K.—Shreveport, La.	1
Kersey, T. M.—Dallas, Texas	1
Lyncker, F. O.—New Orleans, La.	1
McKinney, E. W.—New Orleans	2
Muller, Paul—New Orleans, La.	1
Peters, K. O.—St. Petersburg, Fla.	2
Sagendorf, F. P.—Fairfax, Va.	1
Segall, B. Z.—New Orleans, La.	3
Sprouse, J. B.—Clarksdale, Miss.	7
Stewart, W. B.—San Antonio, Tex.	1
Turnage, L. A.—Hartsville, S. C.	1
Weber, Chas.—Beaumont, Tex.	1
Welman, George—New Orleans	2
Whitner, Jos.—Atlanta, Ga.	3
Yelverton, T.—Sylvarena, Miss.	1
Zimmer, Chas.—Houston, Tex.	1
Total	73

Membership in the I.A.E.I. provides a splendid opportunity to learn the requirements of the National Electrical Code through publications of the Association and attendance at chapter and section meetings. Further details about membership in this organization may be obtained from Joseph Whitner, secretary, Southern Section, I.A.E.I., Post Office Box 1743, Atlanta, Ga.

Georgia Inspectors To Meet in Albany

The annual meeting of the Georgia Chapter, International Association of Electrical Inspectors, will be held at the Gordon Hotel, Albany, Georgia, February 7 and 8.

While most of the program will be devoted to discussion of the 1940 edition of the National Electrical Code, there will be much of interest to electrical contractors and utility service employees. All members of the electrical industry are cordially invited to attend.

Electrical Pioneer Dies in New Orleans

The South lost one of its pioneers in the electrical industry in the recent death of E. H. McFall in New Orleans. Mr. McFall, who was 79 years old, was a resident of New Orleans.

Mr. McFall is probably best remembered for his outstanding work in installing the cooling system in the Kolb's Restaurant in New Orleans more than 50 years ago. This cooling system consists of 13 large fans, all operated by a single motor by means of a system of shafts and belts.

Despite his age and the fact that he was retired, Mr. McFall kept abreast of the latest developments in the electrical industry.

He played an outstanding part in the development of the electrical industry in New Orleans. Mr. McFall was one of the first electrical men to engage in the contracting business in New Orleans, and while his previous training had been largely in the telephone field, he first took up electrical construction work with the Edison Electric Illuminating Company in their installation and supply department.

Known as an intimate friend of Thomas A. Edison, Mr. McFall was always eager to advise those who came to him for assistance in his particular field.

With features like the NORGE NIGHT-WATCH*

you can SELL UP from Price-Tag Competition . . .

*NORGE NIGHT-WATCH automatically defrosts freezer *EVERY NIGHT* for top-notch refrigeration all day, EVERY DAY!

FEATURES OF NORGE SUPER DE LUXE "66"—MODEL 5-663

1. Over-size food compartment, 6.6 cubic feet
2. 13.17 square feet of shelf area
3. 4 full shelves—1 with insert
4. Chrome shelves with curved guard-rail fronts
5. Exclusive Safety-Sealed Fast-Freezer—odor and flavor-proof to assure tasteless ice cubes
6. Refrigerated freezer shelf
7. 4 easy-out mechanical ice trays
8. 70 ice cubes (10 lbs.)
9. Exclusive Night-Watch Full Automatic Defroster
10. Beautiful chrome trimmed Night-Watch Electric Clock; fine quality; parts sealed in oil; large second hand; self-starting
11. Exclusive Norge Handefroster
12. Sliding covered Coldpack meat drawer
13. *Full width* sliding glass-covered Hydrovoir vegetable drawer
14. Porcelain interior with acid-resisting bottom
15. Exclusive big Cellaret reserve storage
16. 6 Big Zones of food storage—
    1) Freezing Zone for ice, salads, desserts, frozen foods
    2) Beverage Zone for milk, ginger ale, etc.
    3) Extra Cold Zone for fresh meats
    4) General Cold Storage Zone
    5) Cold-Moist Zone for green vegetables
    6) Reserve Storage Zone for bottles, canned goods, etc.
17. Automatic electric floodlight.
18. Norgite insulating door panel
19. Genuine, nationally advertised, Fiberglas insulation
20. Hollywood beauty cabinet
21. Beautiful chromium hardware
22. New Lazilatch door handle giving finger-tip opening and closing
23. Set of refrigerator dishes (oven ware)
24. Famous Quiet-Flo Rollator Cold-Maker
25. Exclusive Motor-Cooler gives exceptional cold making efficiency, assures long life
26. Curved throat lining of silver plastic with chrome trim
27. Stainless steel base trim

The Norge dealer can talk price-tags too, of course, but he can talk consumer language that is a lot more profitable . . . FEATURES.

The Night-Watch, for example, completely defrosts the freezer automatically, every night at midnight, and reduces defrosting attention to once-a-week emptying of the Handefroster. This is ONE GREAT IMPROVEMENT women have been waiting for—*REAL* AUTOMATIC DEFROSTING—perfected by Norge because Norge already had the exclusive Sealed Freezer, Covered Coldpack and Handefroster—all of which are necessary to real automatic defrosting.

This improvement will go big with every buyer; particularly the replacement buyer because it marks the greatest difference between what she has, and the most up-to-date refrigerator she can buy.

And Norge has plenty of other features that make grand salesroom and living room talk. These features "step-up" in logical sequence from great value lowest-priced models to the big capacity Super De Luxe "Nine." They carry the prospect away from price-tags, toward the product she needs and should have, with the profits *you* need and *must have*. Norge, with the only complete "family" of home appliances, offers you the greatest year-'round profit opportunity in the appliance industry. Write for details.

NORGE DIVISION BORG-WARNER CORPORATION, DETROIT, MICHIGAN

See NORGE before you buy

NORGE QUIET-FLO ROLLATOR REFRIGERATION • GAS AND ELECTRIC RANGES • WASHERS
HOME HEATERS • GAS AND ELECTRIC WATER HEATERS • COMMERCIAL REFRIGERATION

NORGE

Quiet-Flo ROLLATOR REFRIGERATION

MANUFACTURERS' News

Outlook for 1941 Bright For Electrical Industry

An increase in sales of 15% to 20% for the electrical manufacturing industry in 1941 as compared with 1940 is estimated in the year-end report of W. J. Donald, managing director of the National Electrical Manufacturers Association, New York. "Plainly, the outlook is one of capacity operations. The expectation is for a busy, but not an unusually profitable year."

This forecast is based upon an expected rise in general business of about 10% during 1941. It is felt that the electrical manufacturing industry will run between 5% and 10% ahead of the average of general business.

The estimate for 1941 is based primarily on four assumptions:

1. The chief factor will be that of meeting the requirements of national defense. It has been estimated that about $35 billions will be spent on defense in the next five years. On this basis, it is expected that approximately $7 billions and $9 billions will be spent on defense in 1941 and 1942, respectively. Thus, the peak for defense expenditures is still two years off, but 1941 should see the national defense program well under way. Contracts already let are beyond the $9 billion mark, although only a small percentage of these orders has been converted into finished goods. Therefore, the full effect of national defense expenditures cannot be expected until the middle of 1941.

2. The level of national income is expected to undergo a considerable rise. National income, now around the $74 billion level, may well reach $80 billions in 1941. It is felt that the expansion of productive capacity and the increased demand for heavy goods will make for increases in employment, wages, and purchasing power to such an extent that the estimated level will be within the realm of accomplishment.

3. Electric power demands are expected to reach a new high.

4. Construction, a vital factor in general business recovery, had an excellent year in 1940, and a continued upturn is anticipated.

However, it is recognized that certain conditions may arise which may alter the prospects for 1941, namely, "there is evidence on every hand that war may break forth at any time in a number of additional widely separated areas. Every extension of the war increases the possibility of American involvement. It is impossible to forget and equally difficult properly to measure the entire effect arising from a continuation of non-involvement, and, by the same token, adequately to anticipate the consequences of involvement, if it should come."

Furthermore, the problem of priorities is brought sharply to the fore by the demands of national defense. Its probable effect is also extremely difficult to measure at this time. Nonetheless, "it is not amiss to give the warning that unless businessmen can plan and anticipate their likely needs for capital, labor, and productive capacity, as well as the possible requirements of competitive lines (that is, competitive for raw materials, labor, and fabricated goods), it will be impossible for business long to go on as usual." Anticipation and cooperation are the keynotes for the future, according to Mr. Donald.

G-E Construction Materials Division Conducts "Fair"

Against the background and atmosphere of a country fair, the construction materials division of the General Electric Company went on display with its complete line on Friday, November 15, in the General Electric Institute, Bridgeport, Conn.

Construction materials in the process of manufacture and under the torture chamber conditions of life tests, as well as the finished products, enlivened the gay stalls and booths assembled for more than 150 editors and business representatives from 82 trade magazines interested in factories, mills, mines, electric utilities, building, electrical contracting, and the many fields in which the division's products are used.

H. L. Andrews, vice president of General Electric and manager of the appliance and merchandise department, and J. H. Crawford, manager of the construction materials sales division, welcomed the visitors with brief talks before the opening of the Fair. H. E. Merrill, construction materials advertising manager, who was in charge of the Fair, said its objectives were that of a mutual get-acquainted party at which the magazine representatives could see all of the division's activities at one time.

Doors of the main auditorium of the institute opened to a fanfare of carnival noises, recorded calliope music, and shouting barkers. The visitors were decked out in wide-brimmed straw hats and corncob pipes as they entered the room full of brightly colored canopies and balloons.

Swinging around the carnival, the visitor found booths devoted to accessory equipment, wiring devices, wire and cable, the "Wirometer," conduit products, manufacturing processes, Glyptal, Deltabeston, automotive and new products. Action, light and color enlivened all the displays, while barkers and an accordionist kept up a background of carnival hubbub.

Demonstrations of a rotating lock fluorescent lampholder and a new anchor-loop prong attachment plug featured the accessory equipment booth. The entire line of materials used by manufacturers for their products were also shown. Mercury switches were introduced with a humorous touch in a "shell game." The wire and cable booth included displays of synthetic-insulated small diameter Flamenol building wire for rewiring existing raceways.

A giant-sized "Wirometer" demonstrated its use in computing wiring problems in accordance with 1940 N.E.C., including: conduit full of all approved types of building wires and

Against a background and atmosphere of a country fair, General Electric's construction materials division went on display with its complete line recently in Bridgeport.

ANNOUNCING!

NEW LOW PRICES ON

HOTPOINT CALROD

ELECTRIC RANGE REPLACEMENT UNITS

UTILITY SIZE
WAS $7.00 . . . NOW $5.95

GIANT SIZE
WAS $9.00 . . . NOW $7.95

(Includes stainless steel adapter rings)

NOW a minimum number of adapter rings fit practically all makes of electric ranges. Benefit by this low investment. Cut inventory—add to Profits!

Today 2½ Million Electric Ranges Need Modernization

Get in on this rich market which Hotpoint Calrod opens for you with the 2-Way Profit Plan!

1. MODERNIZE OLD ELECTRIC RANGES

2. SELL NEW HOTPOINT ELECTRIC RANGES

WITH the sensational new price reductions, you can cash in on the public interest in "Measured Heat" cooking by modernizing old-style electric ranges. It's a great prospect-getter, leads to new sales of Hotpoint Electric Ranges as well. Two profit chances for you. Call your distributor or Hotpoint district representative now. Edison General Electric Appliance Co., Inc., 5614 West Taylor Street, Chicago, Illinois.

NEW 1941 HI-SPEED HOTPOINT CALROD

—is the only unit with terminals on the side, away from spillage.

—is the only unit with *Inconel* metal tube containing more than 3½ times as much nickel-chromium as any other unit.

—is the only unit built of corrosion-resisting materials throughout.

—is the only unit with bushing glass-sealed terminals, insuring longer life.

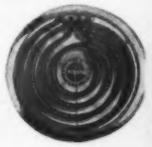
FASTER STARTING—more efficient, more durable than ever before—yet uses less current!

SELF-CLEANING—normal spillage is quickly consumed in the glowing heat of the self-cleaning coils

REMOVABLE REFLECTOR—one-piece, polished aluminum reflector pan "pops" out—can be washed like a pie tin.

UNDISPUTED LEADER AMONG COOKING UNITS

YOU CAN *SEE* THE DIFFERENCE



OLD **NEW**

Hotpoint CALROD

THE ONLY ELECTRIC RANGE SURFACE UNITS WITH INCONEL SHEATH AND GLASS SEALED TERMINALS

wires of different sizes in one conduit, current capacities for wires when more than three wires are run in one conduit, corrections in current-carrying capacity for ambient temperatures over 30 degrees C., and voltage drop for eight distribution systems.

"Quicklag" Breaker Has Thermal, Magnetic Action

New perfection in circuit protection is attained by a new small circuit breaker just announced by the Westinghouse Electric & Manufacturing Company. Designed primarily for the protection of lighting, appliance, and motor circuits in homes, buildings, stores, and factories, this new "Quicklag" circuit breaker introduces a new principle to circuit protection. Its name, though paradoxical, is apt, for the new breaker successfully combines for the first time in a single unit a cooperative magnetic and a thermal trip—something which no breaker has ever done before. It is available in ratings of 15 to 35 amperes, single pole only, 250 volts a-c and 125 volts d-c.

The combination of the Bi-metal thermal and the magnetic trip actions gives the new device the advantage of instantaneous trip on short circuits combined with the well-known advantage of time-delay for momentary overloads such as those caused by lamp, appliance, or motor inrush currents. The thermal action is designed to take care of inrush currents for all of the common combinations of household appliances without causing an unnecessary service outage. The magnetic action gives instantaneous circuit opening for all short circuits, even those in the lower current ranges—down to 200 amperes—such as are caused by incomplete flexible cord shorts.

Numerous other features make this new breaker outstanding. Its size is smaller per watt capacity than that of any similar circuit breaker before it. There are no live parts exposed to accidental contact. Calibration is permanent and is sealed against tampering. Contacts are low-resistant and tests show that even after years of service, they remain so. The operating mechanism gives a quick make and break, and arcs resulting from heavy current interruptions are quickly snuffed out by the "De-Ion" grid assembly. To facilitate connections, solderless terminals are used.

Automatic operation is indicated by the handle position, which has a central tripped position. Current

These New 1941 General Electric Ranges Will Sell on Sight!

And the New G-E "Roast of the Month" Club Will Bring Customers into Your Store!

Tie These New 1941 Ranges to the Greatest Range Promotion Idea Ever Offered to Dealers!

Here's promotion that really will pull prospects into your store. It will make them *look* at G-E Ranges. It will lead them to *buy* G-E Ranges from you.

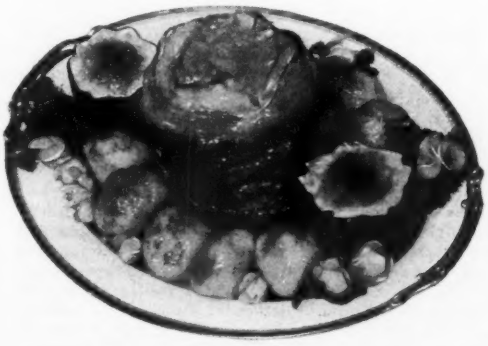
Heavy G-E advertising will draw armies of women into the G-E "Roast of the Month" Club. Every one of these women must come to a G-E dealer to enroll. Every roast she puts into her oven will put a G-E Range in her mind.

Here's promotion that *does* something for you at the point of sale. Permits you to tell to willing, friendly ears the new G-E story of feature after feature for clean, fast, thrifty cooking—electrically—on a G-E Range.

The G-E Range promotion for 1941 will keep close step with the G-E "Roast of the Month" campaign. Color ads in magazines. Powerful mailing pieces. Handsome store displays. Punchy newspaper ads to build your business locally.

Coming soon! A beautiful folder with complete details on the G-E "Roast of the Month" Club and how dealers can cash in on this tremendous nation-wide program. Keep in touch with your G-E distributor!

Every Roast Will Work for You in 1941!



THE STRATOLINER
Model DD2-41

THE LEADER
Model CT1-41

A Complete Line of New Models to Boost Your Profits. As Economical as They Are Beautiful

GENERAL ELECTRIC

ratings are clearly and plainly marked on the operating handle, which is trip-free.

The clean cut modernistic case design insures an attractive and pleasing appearance when these breakers are grouped on panelboards. Case is of molded Micarta. Handle is of heavy duty Moldarta and moves in grooves that prevent tampering. Further information may be obtained from Dept. 7-N-20, Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.

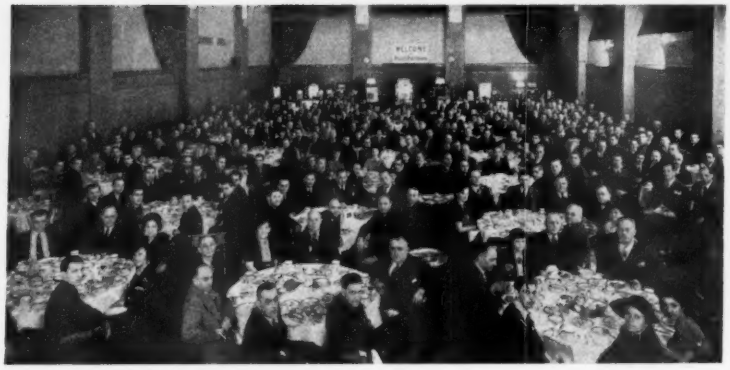
New Wiremold Plant Unit in Production

The new 30,000 sq. ft. addition to the plant of The Wiremold Company, Hartford, Connecticut, is now in full operation. An interesting feature is the new set up for high-speed straight-line production of Wiremold Raceways, many thousands of feet of which are now being installed in factories working on national defense orders. Other important new facilities include special equipment for the manufacture of Wiremold Fluorescent Lighting Units and Line-O-Lamps for commercial and industrial use.

Kwikon Combines Office And Factory in Chicago

The Kwikon Company, manufacturers of conduit fittings, recently moved its offices and manufacturing plant to 1850 West Washington Blvd., Chicago, Illinois. Formerly, their offices were located at 626 West Jackson Blvd., with factory at Rock Island, Ill.

The new location, which combines offices and factory under one roof, affords greater manufacturing space and room for expansion and additions to their conduit fittings line.



More than 5,000 active and prospective dealers of the Premier Division of Electric Vacuum Cleaner Company have attended a series of meetings scheduled for 25 principal cities. This group of dealers met in Cleveland for a preview of Premier's new models and merchandising policies.

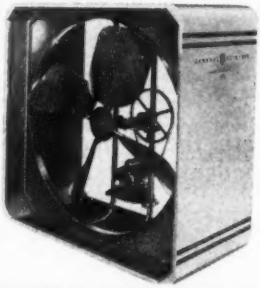
Wakefield Reports Increased Fluorescent Unit Demand

The Wakefield Brass Company, manufacturer of commercial lighting equipment, has announced completion of an expansion program doubling the size of its plant in Vermilion, Ohio. The work was handled by the Austin Company, who designed and erected the addition in a record period of three weeks.

A. F. Wakefield, president of the company, which pioneered in the development of plastic reflectors and is now producing many types of plastic lighting units and other fixtures, stated that the additional space will be devoted to handling the company's rapidly expanding business in fluorescent lighting units.

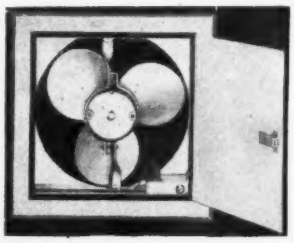
A van-load of newly created stage properties and a troupe of General Electric lighting educators took to the road recently on a tour that literally will wheel world-famous Nela Park, in Cleveland, to the nation. L. C. Kent, manager of General Electric Lighting Institute, estimates that a full year will be required to complete the 12,000-mile tour planned. The institute-on-wheels will make approximately 100 stops in main population centers where deluxe lighting shows will be staged. Among the experts from Nela Park Engineering Department who will accompany the group are James M. Ketch, Walter Sturrock, Aileen Page, and C. E. Weitz. The comprehensive nature of the demonstration is indicated to some extent by these photos of displays to be presented. At upper left, Mr. Kent exhibits latest type G-E Mazda lamps in a stage setting featuring the spectrum chart. Upper right, Mr. Ketch, left, and Gordon Conkle, property man with the show, are shown on stage with all the necessary paraphernalia to give a complete and understandable demonstration on the subject of light control. Walter Sturrock, at lower left, is shown lecturing on the "why" and "how" of proper store lighting, supported by lantern slides and a stageful of fluorescent lamps and new fixtures especially designed for their use. At lower right, a close-up of the new G-E field unit van and group of three Nela Park faculty members: Mr. Conkle, Miss Page, and Mr. Ketch.

AIR CIRCULATING *and cooling* EQUIPMENT



GENERAL ELECTRIC Home Cooling Units, by General Electric Co., Bridgeport, Conn.

THE FRESH-AIR MAKER by Schwitzer-Cummins Co., Indianapolis, Ind.



SHEPLER Wall and Ceiling Fans by Shepler Mfg. Co., Pittsburgh, Pa.

Advertisers In This Section:

Diehl Manufacturing Co.

General Electric Co.

Hunter Fan & Ventilating Co., Inc.

Schwitzer-Cummins Co.

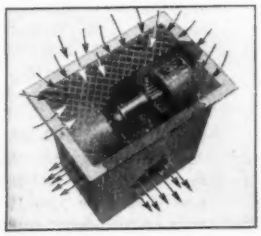
Shepler Mfg. Co.

Signal Electric Mfg. Co.

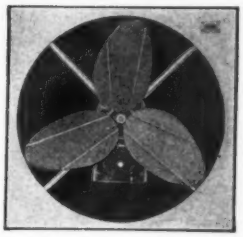
Skuttle Sales Co.

Victor Electric Products, Inc.

VICTOR New Revolaire by Victor Electric Products, Inc., Cincinnati, Ohio.

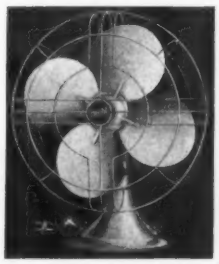


SKUTTLE'S Air Mover by Skuttle Sales Co., Detroit, Mich.

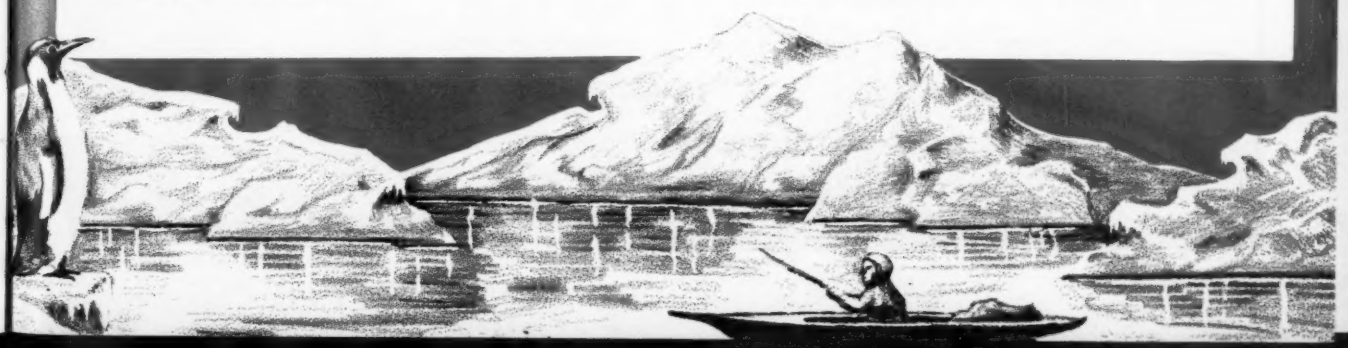


AUTOVENT'S COOLVENT Attic Fan by Autovent Fan & Blower Co., Chicago, Ill.

SIGNAL'S Deluxe Streamliner. Signal Electric Mfg. Co.



DIEHL 16-inch Oscillating Fan by Diehl Mfg. Co., Elizabethport, N. J.



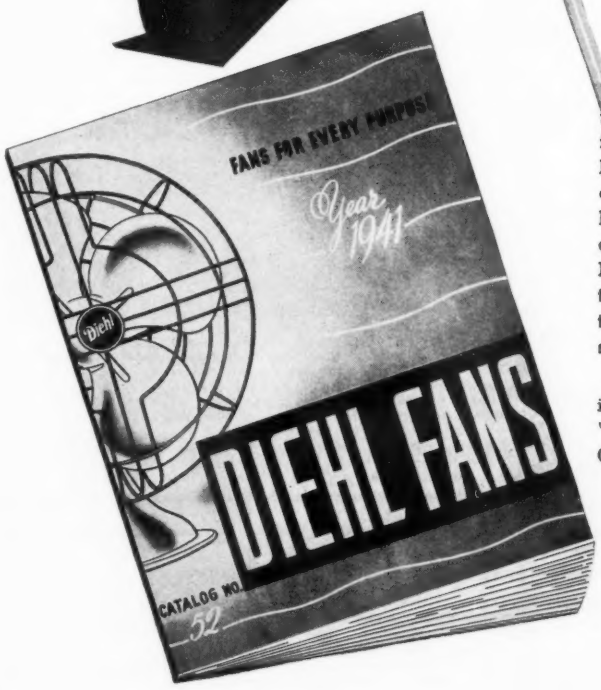
DIEHL MANUFACTURING CO.
ELIZABETHPORT, N. J.

YES, I do want your 1941 Fan Catalog. We are interested in PREPAREDNESS FOR PROFIT.

COMPANY _____
STREET ADDRESS _____ STATE _____
CITY _____ TITLE _____
SIGNED _____

IMPORTANT

Action and Speed is the Message. Tear off this coupon. Mail it Now! Diehl Fans will build profit for you in 1941.



HOW TO GET YOUR FULL SHARE OF *1941 Fan Profits*

The forecast is that the South will purchase more quality fans this year than ever before. People have more money to spend for the improved ventilation of their homes and places of business. The six important new models added to the already extensive and immensely popular Diehl Fan line are going to bring a good part of that money to Diehl dealers. By acting quickly you can get your full share of these increased sales. Be the first in your locality to feature these new models with the other Diehl Fans for 1941. Make your store known now as the place to go for the new Diehl Fans and enjoy an extra sales increase throughout the year.

The 1941 Diehl Fan Catalog is off the press. In it you'll find illustrations and full descriptions of the new models—the "DeLuxe" Oscillating Air Circulator, 16-Inch Popularly-Priced Oscillator, 12-Inch Pedestal Type Oscillator, Portable Home Coolers, Man Coolers, Exhaust Fans and Motor-operated Steel Shutters. Also featured are the fast selling Diehl Desk and Bracket Fans, Ceiling Fans, Attic Fans, Kitchen Ventilators, Commercial Ventilating Fans and other proven profit-builders, many of them still further improved for 1941.

Prepare now for a banner fan year! Send the coupon at once and get your copy of the 1941 Catalog. It contains a wealth of information you'll need in order to go after your full share of the increased 1941 Diehl Fan sales.

DIEHL MANUFACTURING CO., Elizabethport, N. J.
Electrical Division of THE SINGER MANUFACTURING CO.
ATLANTA BOSTON CHICAGO DALLAS NEW YORK PHILADELPHIA

934

A Fan Dealer's Darkest Day! : : : BY WEBSTER

Now Is the Time to Think Ahead—Time to Look Over the Complete Line of G-E Fans for 1941!

When the heat—and opportunity—hit you this summer—don't be caught with your stocks down! When sweltering citizens stagger into your store, gasping "fans! fans!"—cool 'em off with the G-E line.

General Electric offers you the most complete line of fans in America. The line of fans with the greatest name—the best advertised name—in the electrical industry.

Your G-E distributor salesman offers you a better deal than ever for 1941. A new, faster-moving group of fans at lower prices. A bigger boost in promotion. A sweeter set-up all 'round.

Hear his story. Act in time. Get set now for your summer harvest of G-E fan profits!

Fan Sales Section, Appliance and Merchandise Department, General Electric Company, Bridgeport, Conn.

YOU GET ALL THIS POWERFUL PROMOTION *FREE!*

1. A 10-color action *Window Display* that will stop 'em, hold 'em and sell 'em.
2. Handsome *Catalogs* crammed with facts and illustrations that build sales.
3. Direct *Mail Pieces* that "get in the door" of homes, stores, offices.
4. Local newspaper *Ad Mats* that help you sell when your market is "hot."
5. Powerful National *Newspaper Ads* in over 175 key cities—run when you need them—in local hot weather.

GENERAL ELECTRIC

Shown above is the new plant recently acquired by Schwitzer-Cummins Company, Indianapolis, Inc., manufacturers of stokers, blowers, and ventilating equipment. This latest acquisition was made necessary by expanding business. It will provide assurance that sufficient space will be available to take care of 1941 demands. The new plant will be used for the production of blowers and ventilating equipment as well as stokers.

Easy Launches Market Expansion Program

A new program of market expansion and dealer development is being launched by the Easy Washing Machine Corporation, according to an announcement by J. J. Nance, general sales manager. One of the most extensive market activities ever undertaken by the company, the program has been necessitated by the growing demand for Easy washers and ironers and for franchises to distribute those products, Mr. Nance declared.

The outstanding feature of the drive is the organization of a Dealer Development Department under the direction of W. H. Reeve. Simultaneously, the Major Dealer Development Department, established last January and also directed by Mr. Reeve, is being expanded. In addition, the company is adding to its plant facilities with the erection of a new warehouse scheduled for completion in January, 1941.

Functions of the new department will be confined, in general, to planning. It will work closely with divisional managers, district sales managers and distributors, who will continue to control routine dealer activity. Its objective will be to provide proper balance of territory coverage and high quality of dealer organization in both major and secondary markets.

Modern Electric Kitchens Subject of New Booklets

Electrical contractors and builders, as well as electric utility kitchen planning divisions, will be particularly interested in two new pieces of literature just released by the Youngstown Pressed Steel Company, of Warren, Ohio, manufacturers of kitchen cabinets and sinks.

One of the booklets, an 8-page catalog, is designed for general distribution to prospective home builders. It describes the complete line of sinks and cabinets manufactured by Youngstown. "Better Kitchens At a Lower Cost," is the title of the other booklet, which includes 24 pages of photographs and data on modern electric kitchens. The booklet is printed in two colors and has a modern spiral binding. All photographs of modern kitchens are accompanied by a list of the specific cabinets used in their construction. Several pages are provided in the back for the contractor or builder to tie in photographs of local installations.

Electrical Code Available In New Large-Type Edition

The second edition of the Enlarged National Electrical Code as published by the Compson Code Company of Lansing, Michigan, is a welcome addition to the list of new electrical books.

The Enlarged Code is offered to engineers, architects, inspectors, contractors and to all those associated with the electrical industry who find it necessary to make a close study of the Code in connection with their work.

The quick acceptance by the industry of the 1937 Enlarged Code has made it a pleasure for the company to meet the increasing demand for the 1940 enlarged edition.

General Cable Offers Wire Data Calculator

A slide rule type calculator for wire calculations is now available from General Cable Corporation, 420 Lexington Avenue, New York. The calculator provides a handy means of determining pertinent information on the various types of building wire now recognized by the National Electrical Code.

One side of the calculator is for rewiring work. The slide is adjusted to the size and type of wire desired. Amperes per conductor and size of conduit for any number of conductors can then be read directly from the calculator. The other side of the calculator includes data for new work.

News About People—

M. C. Wilt has been appointed vice president and general manager of Curtis Lighting, Inc., according to recent announcement by **Darwin Curtis,** president. At the same time, Mr. Curtis also announced the following appointments: **G. T. Morrow,** vice president in charge of sales; **H. J. Dillon,** vice president in charge of production; and **L. N. West,** secretary-treasurer. **Kenneth Curtis** continues as chairman of the board of Curtis Lighting, Inc.

M. C. Wilt

Originally a Nela Park man, Mr. Wilt entered the selling field with the sales division of the Ohio Power Company in 1924. He was later transferred to the Appalachian Electric Power Company, and in 1928, he became the Curtis Lighting sales representative for the Cleveland territory. In 1931, Mr. Wilt set up and organized Curtis Lighting of Canada.

G. T. Morrow

Mr. Morrow has been associated with Curtis Lighting since 1923, first as sales representative in Pittsburgh, and later as assistant sales manager in the general offices. For the past two years, he has served as sales manager.

Mr. Dillon has been responsible for Curtis production and processing since 1935. His wide range of experience in the production field included the position of factory manager for the King Manufacturing Company, of Buffalo; vice president and general manager of the Amrad Corporation, Bedford Hillside, Mass.; and vice president and assistant general manager of the Magnavox Com-

L. N. West

pany, of Fort Wayne, Ind.

Mr. West, who becomes secretary-treasurer, has been assistant to the president since early in 1939. His previous experience includes association with several certified public accounting firms as well as positions as comptroller and office manager.

* * *

Ross R. Smith, who has been manager of the kitchen sales division of the Edison General Electric Appliance Company for nearly two years, has established a new Hotpoint office in Washington, D. C., where he will devote his entire time to cooperation with those responsible for Federal Housing and other large building projects, according to announcement by **R. W. Turnbull,** Hotpoint vice president.

At the same time, it was announced

C. Griffith R. R. Smith

that **Charles H. Griffith,** formerly manager of the Hotpoint distributing branch at Buffalo, N. Y., has been appointed manager of the kitchen sales division to succeed Mr. Smith. In addition to special activities in the building field, and direction of Hotpoint's kitchen planning service, Mr. Griffith's division will supervise the merchandising of Hotpoint kitchen sanitation equipment, including electric dishwashers, kitchen waste exits, and the Electrasink.

* * *

The appointment of **W. M. Thompson** as sales promotion manager of the Norge Division, Borg-Warner Corporation, has been announced by **M. G. O'Harra,** vice president in charge of sales. Mr. Thompson has had wide experience in the appliance field. He was formerly assistant advertising and sales promotion manager for Grigsby-Grunow Company; he was associated for several years in sales promotion work with the Stewart-Warner Corporation; and, more recently, was assistant sales manager with Farnsworth Television & Radio Corporation.

* * *

Charles J. Allen, formerly an assistant sales manager in the eastern area for Frigidaire Division, General Motors Sales Corporation, has been appointed manager of the company's Baltimore-Washington office, succeeding **H. L. Harbison** who has resigned. Mr. Allen has been associated with the Frigidaire organization for 15 years. Previously he served in the company's educational department, as a zone manager, and as an assistant sales manager.

* * *

W. T. Roundy has been transferred to the Atlanta office of Cutler-Hammer, Inc., according to **A. C. Gibson,** manager of the company's Atlanta district sales territory. Mr. Roundy has been assigned to the state of Florida and will make his headquarters at Orlando. A graduate electrical engineer of Marquette University, Mr. Roundy first became associated with Cutler-Hammer in the manufacturing division at the main plant in Milwaukee, Wis. Later, he served in the merchandising and resale departments and also as a sales engineer in the company's Cincinnati and Indianapolis offices.

* * *

J. K. Hodnette recently was appointed manager of transformer engineering at the Sharon (Pa.) works of the Westinghouse Electric & Manufacturing Company, succeeding H. V. Putman, who has become manager of the transformer division. Mr. Hodnette is a native of Notasulga, Alabama, where he was born in 1902. He obtained his engineering education at Alabama Polytechnical Institute at Auburn.

Coming to Westinghouse in 1923 he worked first in the test department and as an engineer in the materials and process department before beginning his work on distribution transformers in 1925. Early in 1940, Mr. Hodnette was honored by election as "a modern pioneer of the American frontier of industry" for his outstanding work in the development of the self-protected transformer. He has been granted ten patents dealing with major improvements in transformers.

New Products

Victor Fan Line

Outstanding in the new Victor Miracle Breeze line is the Vogue, a small, smoothly-performing 8-inch fan designed especially for the home market. This fan and its companion models are manufactured by Victor Electric Products, Inc., Cincinnati, Ohio, makers of a complete line of circulating fans, motors and In-Bilt ventilators.

The Vogue is small, but highly efficient in operation, combining maximum cooling action with minimum expense. "Scooper" blades create a breeze that can be felt for 15 feet and more. A "tilt" guard permits up and down focusing, insuring safe fan comfort. This modern, low-priced fan is finished in attractive statuary bronze with bright metal blades.

Another breeze sensation is the Victor Viking, provided with low, medium, and high motor speeds for every purpose. The same quality features of this 16-inch model are incorporated in a smaller model, the 12-inch Vortex. Although the blades are of necessity thick, they move with "kitten-purr" quietness.

A new note is struck in Victor fans with the "Flexaire Breeze Director," found on the 12-inch Vanguard, as well as on the Viking and Vortex. This patented feature enables the fan to achieve the full effect of an oscillating fan without the use of oscillating mechanism.

W. T. Roundy C. J. Allen M. W. Thompson

Westinghouse Captain Cleaner

One of the housewife's most unpleasant tasks—emptying the dirt from her vacuum cleaner—is changed to a clean, simple operation by the special design of a new vacuum cleaner model announced by the Westinghouse Electric & Manufacturing Company of Mansfield, Ohio.

"Easy-Empty" tabs on the bag of the new model, which is known as the "Captain," serve the double purpose of preventing dust from flying back into the room while the bag is being emptied, and eliminate the possibility of the metal clip on the top of the bag scratching polished furniture. The tabs act as a seal between the bag and the paper on which the contents of the bag are being emptied.

The special large-mouth design of the bag, a heavy brown moleskin, also contributes to the ease of emptying. The Moldarta motor hood and the aluminum nozzle of the new streamlined model are finished in rich brown and tan.

H. B. Donley, Manager of the Westinghouse Merchandising Division Appliance Department, announced the "Captain," which is priced at $39.95, as the feature model of the company's new vacuum cleaner line, which now consists of four models.

The others, introduced several months ago, are the "Pacemaker," a cylinder model priced at $59.95: the "Floor Cruiser," a light-duty cleaner which may be used as a hand cleaner or a floor model, at $18.95, and a motor-driven brush hand cleaner priced at $16.95.

New Silex Dealer Offer

"Four Aces" is the name of the newest and best of the special Silex Assortments for houseware dealers. Three of the popular wide neck Bretton Model Silex Glass Coffee Makers —with free Serving Trays to match —one Saratoga Model, also with the easy-to-clean wide neck lower bowl —and a special Bretton "Demonstrator Unit" absolutely free make up the complete Four Aces Assortment. It has a regular list price of $20.75, but it's selling until February 28, 1941, at a special list price of only $16.80.

Many dealers who have only a moderate small appliance trade will welcome this assortment as the perfect way to increase their volume. And many other dealers who have hesitated to stock Silex in the past because of extensive financial outlay will recognize this modestly priced Four Aces Assortment as the ideal way to crack open the profitable Silex market for themselves.

Dealers who already stock Silex will find this assortment ideal to put right in with their present stock. It is packed full of sales stimulators which will not only sell the Four Aces Assortment, but will speed up Silex sales right down the line. Of particular interest to all dealers is the "Demonstrator Unit" which goes free with every Four Aces Assortment. This can be loaned out to a dealer's better customers for a few days' trial use, at no expense, and it will mean added sales from Silex stock when it comes back.

Further information about the Four Aces Assortment can be had by writing The Silex Company, Hartford, Conn.

Everhot Deluxe Roaster

A new electric roaster is announced by The Swartzbaugh Manufacturing Company of Toledo, Ohio. This new model is called No. 840 Deluxe and embodies new features of design and construction. Strikingly effective results are obtained by trimming roaster and cabinet in cool pearl gray and chrome inlays creating smartness and eye-appeal of obvious merchandising power.

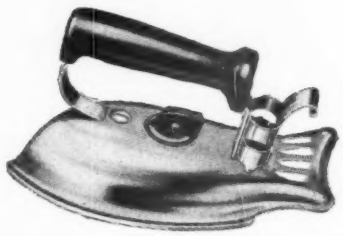
A Timer-Clock control for the roaster is mounted in the door of a new cabinet (model 845), where heat cannot affect its operation—where it is convenient to use. Everhot's original turn-a-knob cover lifter is still further improved. White Bakelite handles and knobs complete a color scheme that is ultra modern in every detail.

The spacious interior of the cabinet provides ample room for the utensils that come with the roaster and other appliances and articles that the user desires to keep in the cabinet, such as mixers, trays, etc. The broiler, when not in use, is securely held inside the cabinet door.

Dial-o-Matic Iron

Superstar Dial-o-Matic iron, manufactured by Stern-Brown, Long Island City, N. Y., is an automatic thermostat that holds any desired temperature automatically. The temperature may be adjusted by a dial which is calibrated for various types of fabrics.

Other features of the iron include a thinner patented sole plate, only



¼-inch thick, which assures quick heating and even distribution of heat. The dial by means of which the heat of the iron is adjusted also includes a shut-off position which eliminates the necessity of pulling plugs from the outlet.

A bevelled sole plate permits ironing into pleats, ruffles and across buttons; good balance; an easy-grip handle; and gleaming chrome finish among other features of the iron.

Colt Magnetic Starters

The new Colt magnetic motor starters are designed for across-the-line starting of single and polyphase squirrel cage induction motors, and as primary control for wound rotor induction motors.

One important feature of the new magnetic starters is the three-point point ball-bearing suspension of the movable electro-magnet, assuring a floating action that minimizes friction and guides contacts smoothly into correct alignment. The magnet operates vertically and cannot close accidentally by vibration or shock.

Other features include the double break rounded silver-to-silver contacts—layer wound magnet coils with paper section construction, fully taped, impregnated and baked—the "E" shaped magnet designed to give

a strong pull with low power consumption—easily removed contacts and magnet coils—ample wiring space and plenty of knockouts.

Write Colt's Patent Fire Arms Mfg. Co., Electrical Division, Hartford, Conn., for a copy of Bulletin No. 54, giving complete data on the new colt magnetic starters.

Outdoor Type Receptacle

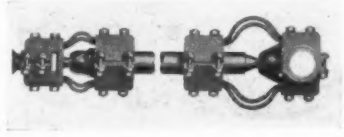
Appleton Electric Company, Chicago, Illinois, manufacturers of the well-known Unilets and other conduit fittings, as well as Reelites, extension reels, announces another new fitting added to their line of special REA conduit fittings (Weathertight) designed expressly to meet the need for inexpensive well-made lighting fixtures, wall receptacles and switches, for use in rural electrification wiring.

The latest fitting to be added to this line is an outdoor receptacle fitting made in two types, with one hub or straight through with two hubs, complete with 15 amp., 125-volt receptacle and with lift cover as shown in illustration.

Complete information on all REA Special Conduit Fittings will be sent upon request.

Burndy Expansion Joints

The Burndy electrical connectors, types XTBS (top) and XDBS (bottom) are designed to permit expansion or contraction of a tap conductor at any angle to the overhead bus or transformer stud. They will "warp" with the sub-station but will not flop about loosely. At the same



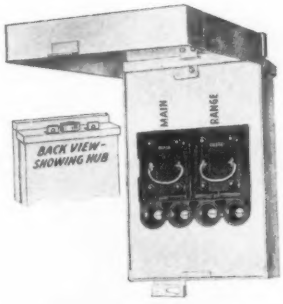
time they will preserve all the advantages of rigid construction. They provide a completely universal joint with ball-and-socket alignment guides incorporated in both stud connector and flexible T-connector. They are designed to accommodate all sizes of tubular conductors.

Wadsworth Rain-Tight Switch

A new addition to the Wadsworth line of rain-tight outdoor switches has just been announced by the Wadsworth Electric Mfg. Company, Inc., Covington, Ky. This outdoor service equipment features the "Renu-Fuse pull cover type construction.

Two display cards designed to help dealer sales of Hamilton Beach mixers are being made available for holiday promotions. Both are in full color from actual color photographs. They are furnished free to Hamilton Beach dealers on request. 14-1/4" x 23-1/2" in size.

It is rated at 60 amperes, 3 poles, solid neutral, 125-250 volts a. c. The switch is made with range and four lighting circuits and water heater terminals, and is also available with 2 and 4 lighting circuits only.



The cabinet is built of rust-resisting (Galvannealed) steel with hub in top and locking or sealing device at the bottom. It has a top hinged door and knockouts arranged below the lowest current carrying parts. The cabinet is finished in durable baked aluminum.

G-E "Hold Tight" Plugs

General Electric has built an "anchor" into attachment plugs to promote closer relations between convenience outlets and cords. A new "Anchor Loop" contact prong, with all the virtues the name implies, has been announced by the G-E construction materials division in Bridgeport, Conn. It's designed to increase holding power in both old and new convenience outlets without distortion of outlet contacts. "Hold tight" is its motto.

The new prongs can be supplied on several types and sizes of General Electric molded-on, all-rubber attachment plugs. The prongs are designed to eliminate excessive stress on outlet contacts, and tests indicate that outlets retain their original ability to hold standard solid prongs after long use of plug caps with new "Anchor Loop' contacts.

Benjamin "Stream-Flo 60"

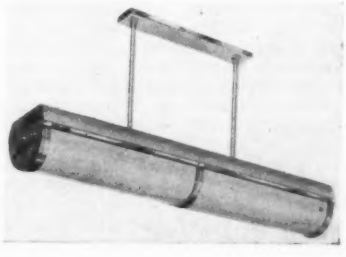
A new Benjamin fluorescent lighting unit to utilize the extra light advantages of the new 60-inch fluorescent lamps and embodying a new Stream-Flo development to provide for ceiling illumination, has just been announced by the Benjamin Electric Mfg. Co., DesPlaines, Illinois.

This new unit, known as the Benjamin RLM "Stream-Flo 60," has all the operating and design advantages of the well-known Benjamin "Stream-Flo 48." In addition, the unit is available with a series of apertures located in the top of the reflector directly over each fluorescent lamp. These openings permit approximately 2½% of light output to pass upward to relieve contrast between lighted areas of the room and the ceiling background. By utilizing the new 100-watt, 60-inch fluorescent lamps, this unit extends the scope of practical fluorescent lighting applications by providing the higher levels of illumination required in many industrial locations.

In announcing the new unit, the Benjamin Company states, "This new RLM 'Stream-Flo 60' provides adequate levels of lighting for those industrial locations which require higher mounting and wider spacing than has heretofore been considered practical for fluorescent units. It provides twice as much light as the Benjamin 'Stream-Flo 48,' thus approaching the goal of 50 foot-candles of general fluorescent lighting from installations with 10 x 10 foot spacing. Adequate protection against glare is provided by a shielding angle of 14° and closed-end reflector construction."

New Direct-Indirect Luminaire

A new fluorescent luminaire, the type CL-110, for commercial interiors, such as stores, offices, and public buildings has just been announced by the Westinghouse Electrical & Manufacturing Company. This unit is available in two styles, one for



ceiling, and another for suspension mounting. Either style may be obtained with or without glassware.

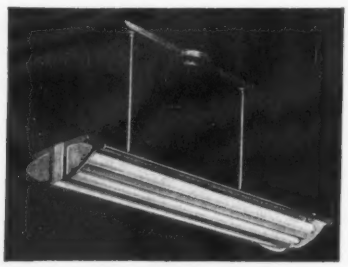
The suspension type luminaire employs 2-40 watt 48-inch fluorescent lamps downward illumination, and one 30 watt, 36 inch lamp for its indirect component. Interesting feature of this arrangement is that a colored ceiling may be obtained by using any one of the five colored lamps available in the 36" size. The ceiling mounted unit utilizes only the two 40 watt, 48 inch lamps, either daylight or white.

The fixture body is an all steel cylindrical frame with die cast end and center sections. Two semi-cylindrical sections of "Alvax" glass diffuse the light. Rectangular steel ceiling plate slips down over stems to facilitate wiring. The one-piece seamless brass stems are provided with a handy means of adjusting the fixtures to a proper level.

Lamp starters are of the convenient and dependable glow switch type. Twin lamp ballasts with built-in capacitors provide high power factor of 95-99%, minimize cyclic flicker, and assure staple lamp performance.

Direct-Indirect Luminaire

A new store and office luminaire for use with fluorescent lamps which provides lighting of the direct-indirect type has been announced by Edwin F. Guth Company, St. Louis, Mo. Utilizing Alzak reflectors, this



unit is said to deliver 85 per cent down light with wide light distribution and 15 per cent up light for ceiling illumination. This new lumunaire is called the Tru-Co-Lite and its modern lines suggest trimness and compactness in design. The fixture is sturdily built with reinforcing cast aluminum ends and is available for four 40-watt lamps or for four 20-watt lamps. It is wired complete with 95-100 per cent power factor accessories and with separate starter switches.

New A-C Flex-Arc Welder

A new modern all-purpose portable a-c welder designed for all around general utility service and production welding of every type, has just been announced by the Westinghouse Electric & Manufacturing Company. Standard models operate on either 220 or 440 volts, are completely self contained, and incorporate several distinct new design features.

From 20 to 250 amperes of welding current is available in twenty-seven current steps, with increments properly proportioned to meet the needs of welding with a wide variety of electrode types and diameters. Current adjustment is easy; just select the current desired, insert the bayonet plugs in the proper receptacles and the machine is ready to weld. Current values are clearly indicated in large legible numerals. A built-in "De-Ion" breaker insures protection against long sustained overloads, such as might occur by accidentally leaving the machine short circuited.

A-S-E Blueprint Files

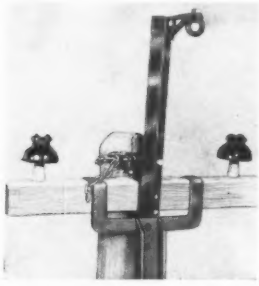
Metal blueprint cabinet files in a wide range of sizes and styles are described in a new folder available from the manufacturer, All-Steel-Equip Company, Aurora, Illinois.

One hand drawer operation is an outstanding feature of these files. The mechanism is designed so that drawers glide quietly like cradle-suspension letter files, without binding.

Unit type construction, in three-drawer and five-drawer units, made in four sizes, gives a flexibility of arrangement that will meet the filing demands of every drafting room. The drawer sizes are available for sheets 24 x 18, 36 x 24, 42 x 30, and 48 x 36. In the three-drawer units, the drawer height is 3-15/16 inches; while the drawers of the five-drawer units are 2 inches high. Strong legs and bases are available for mounting the drawer units.

Chance Pole-Type Gin

A new piece of equipment for lifting transformers or other heavy equipment that must be lifted up the pole is announced by A. B. Chance Co., Utilities Division, Centralia, Mo. This new gin weighs only 14 pounds, and yet is sufficiently strong to lift 2,000 pounds, and is rated to lift 1,350 pounds with an ample safety factor.



The light weight of this gin makes it easy to hoist up a pole and to mount in place and it can be mounted either on the pole or over the crossarm by simply changing the position of fittings with a simple set screw adjustment. It is held in place by a welded steel chain.

Hot Line Tool Trailer

A hot line tool trailer that features a one-piece lid has been introduced by the James R. Kearney Corporation, St. Louis, Mo. The lid is raised and lowered by a crank-operated mechanism from the outside of the trailer. This feature keeps the

trailer dustless and water-tight.

The trailer body is 156" long, 44" wide, and 24" deep. Standard equipment includes tail light, two rear reflectors, and an eye-type hitch. A small electric heater to be plugged into a light circuit for drying tools, is available as an extra.

Distribution Economics—Primary System Design

(*Continued from page* 31)

forecasting is a long step ahead in the direction of low overall cost over a period of years.

4. Primary designs having the greatest flexibility for meeting

changing conditions should be given preference. High salvage value of installed equipment is an important characteristic of this type of design.

5. The time and effort spent in carefully analyzing the application of equipment for improving service continuity will pay large dividends.

Neon Tubing Supplies Corridor Lighting

(*Continued from page* 24)

entire length of the halls, eliminates all shadows, and gives a softer illumination. Except for accidental breakage, there are no replacement charges, the cost of operation is considerably less, and, through the savings thus effected, it is estimated that the cost of installation will be absorbed in about ten years.

An S-shaped curvature is arranged every ten feet. This is done for better apperance, since it would be practically impossible to run the tubing the entire length of the halls and have it absolutely true throughout.

Good School Lighting Exemplified in Dallas

(*Continued from page* 20)

The library, on the second floor, has a high level of illumination provided by six fixtures, each containing three 150-watt lamps.

In the wood- and metal-working shops there is also a high intensity of lighting, a minimum of 50 foot-candles. Each of these shops has twelve RLM reflectors, using 300-watt lamps.

Both of the shops, the boys' and girls' gymnasiums, the showers, and the cafeteria are all air conditioned.

The auditorium is another really modern spot, speaking electrically and otherwise. Principal lighting is by means of a long overhead central trough, directly in the center of the room, extending from front to back. It contains 100-watt lamps on 8-inch spacings, recessed behind diffusing glass, served by thirteen circuits. There are two rows of border lights, each with twelve circuits, and three colors of bulbs.

The large stage is completely equipped for theatrical lighting effects. There are 25 feet of footlights on the 51-foot stage, with lamps in three colors. It is also wired for sound and speaker system.

Whose Responsibility Is Adequate Wiring?

(*Continued from page* 19)

trical contractor attending this meeting arranged with the district manager for a presentation to his Rotary Club. The dealer cooperation manager was called on to do the job.

The contractor reported that, as a result of this demonstration, eight of his fellow members had requested him to check their house wiring. The new business department manager realized he had hit a "natural" for dealer cooperation and the show went on in practically every one of their districts. Clippings of newspaper write-ups on the presentation reached the public relations department with a result that the budget as set up for institutional advertising in those newspapers was turned over to the new business department to feature adequate wiring.

This high-spot review of adequate wiring promotional activities is typical of what is going on and going over with this industry program. At a conference of wiring promotional men recently, one utility sales promotion manager put it this way: "The electrical industry must do the adequate wiring job—or we must admit we have stopped growing. The problem of inadequate wiring is critical now—but it will be more so in the future.

"This year the industry will sell a billion dollars worth of appliances and equipment. We must make it possible to serve all of this equipment. We must not split hairs on the costs of adequate wiring promotion because we cannot afford to cut down on this essential job.

"We are going to spend more money on adequate wiring promotion in the future than we think we are, and we will be glad to do it."

Highlights of the Light And Power Industry

(*Continued from page* 6)

tomers at the end of the year. The private utilities are serving 1,500,000 of these. About one-third of the occupied farms are now taking electric service.

Rates

Average prices for electric service in 1940 reached all time low levels. At the end of the year average price for electricity for residential or domestic service stood at 3.81 cents per kilowatthour as compared with 4.00 cents in 1939, and 7.45 cents two decades ago. The average residential customer used 952 kilowatthours as compared with 897 in 1939. The average revenue per customer was $36.27.

Due to the large increase in industrial use, industrial power rates declined in average price to the lowest point in history. Prices in 1940 averaged 1.04 cents per kilowatthour as compared with 1.12 cents in 1939 and 1.23 cents during a similar war emergency in 1917.

Revenues and Expenses

Total revenues approximated $2,413,000,000 for 1940, an increase of $124,000,000, or 5.4 per cent, over the previous year. None of this increased revenue, however, was carried over to balance available for the investor. Increased sales naturally made necessary increased generation. More coal was burned, and payrolls expanded. Virtually every dollar which was gained through increased sales of retail commercial and of industrial power (about $73,000,000) arising from the war emergency was taken away by increased taxes. Taxes rose $65,000,000 during the year to a new high figure of $405,000,000 and now represent over 17½ per cent of every dollar of gross revenue.

As far as domestic service is concerned, about 20 cents out of every dollar received from the customer goes to the various governments. Out of an annual bill of $36.27 there is some $7.25 concealed in direct taxes and the net bill of $29.02 is practically the same as the net bill one decade ago, although the kilowatthours furnished the consumer have increased by 75 per cent.

Almost all of the year's tax rise has taken place in federal taxation, largely as the result of the increase in the normal income tax from 18 per cent of taxable net in 1939 to 24 per cent in 1940. For that reason the operating income from which the investor receives his return was the same as it was the year before.

New Capital Issues

Financing operations in 1940 were confined almost entirely to refunding and approximated $900,000,000 for the operating electric light and power companies. This was substantially the same amount as the year before but well under

the recent high figure of $1,325,000,000 in 1936. Less than $75,000,000 of this 1940 total financing represented capital from the sale of new securities.

Ice Storm Damages Distribution Systems

(*Continued from page* 8)

tional defense program. They have capable men and necessary equipment and sufficient operating capital to cope with any expansion problem presented."

The most remarkable thing about the storm that sprawled live wires into crowded sections, across highways, and upon homes, was the fact that not a single death or serious accident occurred as a result of damaged lines and equipment.

The most miraculous escape was probably when a power pole with its live wires crashed through the back end of a taxi and cut its way through the back seat. For some reason, the passenger was riding with the driver and neither was hurt.

Another narrow escape occurred when wet garments, hung on a back yard clothes line, blew onto a sagging light wire. The garments were burned up completely but the housewife had already gone into the house and was not near the clothes line when it made contact with the power line.

Oil Heaters Promoted In Utility Campaign

(*Continued from page* 12)

a meeting in the afternoon, presided over by David W. Lodge, general manager of the Belcher Industries, Inc. The need for space heating in southern Florida was stressed; the customer use-advantages of oil heating, term financing for purchasers, and technical details of installaton, all described.

The following day the exhibit was open to the public and more than 400 interested visitors inspected the display. Representatives of manufacturers who came to Miami to participate in this exhibit and who were on hand to talk with interested parties, included T. E. Turner, Timken Detroit Axle Co., Detroit; P. T. Kuhr, Kuhr Brother, Savannah; P. J. Ness, Coleman Lamp and Stove Co., Lake Wales; L. W. Winkels, Estate Stove Co., Hamilton, Ohio; L. C. Blank, Motor Wheel Corp., Detroit; M. A. Miller, Perfection Stove Co., Tampa.

In Sarasota, a meeting for the western division dealers was attended by close to 100 people. It was termed a "Home Heating Equipment Show. A number of dealers agreed to cooperate by handling some one of the several lines on display. A report from one Florida west coast town where an independent concern, not operating in conjunction with the utility company, had installed on an average 40 of these units per month, helped to increase enthusiasm.

Probably the most unusual phase of this campaign is the power company's leadership. It is probably the first time in history that an electric and gas utility company has spent money to boost the other fellow's business, but Florida Power & Light officials are convinced that oil space distribution of the heated air, is the most economical and most efficient kind for this area. Since customer advantage is the first consideration in that company's policy, it initiated and organized this campaign.

The campaign broke in October with a 5-column, 12-inch advertisement. It explained all the advantages of keeping comfortable with a modern oil heater equipped with electric blower. Conforming to the established advertising policy of the power company, readers were urged to consult their own dealers in regard to an installation. November copy was a trifle larger, 7-column by 9-inches. Other layouts will follow each month.

For the next few months, 25,000 personal calls will be made by representatives of the Company on householders, and in each instance the new type of heater will be recommended. No one unit is to be given preference over any other, but the general idea of oil heating will be stressed.

It is not an altruistic motive that wholly induces the Florida Power & Light Company to promote a competitor's line in this way. Each unit will consume some current and each installation helps to complete the electrification of the home. They consider the promotion of such heaters in the same light as their promotion of sinks which contain electric dishwashers and garbage disposers. It is altruistic in so far as it helps further the definite policy of the company — a policy that is summed up in the phrase "Sunshine Service," the slogan of the company since 1925.

Louisiana Dealer Celebrates 20th Year

(*Continued from page* 16)

make many combination sales and service calls. A customer may not understand the product and may not be using it correctly, in which case the salesman can get the matter straightened out in a few minutes. When a complaint is received, a service man is sent out on it immediately. In fact, complaint or service calls receive more prompt attention than do sales calls. The company wishes to maintain the good will of all its customers in order that salesmen can call on them continuously for more business and the names of other prospects.

The company keeps its sales crew of four men busy the year around, yet never does any canvassing. The system is to "work" regular customers and to follow up all prospects and leads. The more than 1500 accounts on their books furnish the salesmen ample material to work on, in addition to following up inquiries and the normal inflow of prospects.

"If you have 1500 to 2000 accounts on your books and sell them everything in your line which they buy throughout the year, you have a nice business," said Mr. Butcher. "That is our goal, though we never will quite reach it, of course.

"We watch all of these accounts and work on some of them continually," he continued. "For example, take a customer who buys a washer. After a few months, if the payments are kept up it is time to go out and sell them something else and add it to the same account, with practically no increase in payments. Some time later they are ready for another item, and so on. We like to always have several items running on the same account."

Mr. Butcher said that newcomers to Lafayette will nearly always come to their store before buying, having been sent in by customers of the store. Their customers sell more for them than do their salesmen, he said.

ADVERTISER'S INDEX

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